

COMMUNICABLE DISEASE TOOLKIT

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PROFILE

Angola



**World Health
Organization**

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Introduction

The purpose of this document is to provide public health professionals working in Angola with up-to-date information on the major communicable disease threats faced by the population. The list of endemic and epidemic-prone diseases has been selected on the basis of the burden of morbidity and mortality. Diseases for which there are global eradication or elimination goals are also included. The document outlines the burden of communicable diseases in Angola for which data are available, provides data on recent outbreaks in the country and presents disease-specific guidelines on the prevention and control of these diseases.

The control of communicable represents a major challenge to those providing health-care services in Angola. It is hoped that this document will facilitate the coordination of communicable disease control activities between all agencies working in the country.

1. ACUTE LOWER RESPIRATORY INFECTIONS (ALRI) CHILDREN LESS THAN FIVE YEARS OF AGE

DESCRIPTION

Infectious agent	Bacteria: the most common are likely to be <i>Streptococcus pneumoniae</i> and <i>Haemophilus influenzae</i> (and <i>Staphylococcus aureus</i> to a lesser extent). Several respiratory viruses.
Case definition	<p>Clinical description</p> <p>ALRI include bronchitis, bronchiolitis and pneumonia (bronchopneumonia and lobar pneumonia). Pneumonia is the most severe and it is fatal in 10–20% of cases if inappropriately treated.</p> <p>Pneumonia Cough or difficult breathing and Breathing 50 times or more per minute for infants aged 2 months to 1 year Breathing 40 times or more per minute for children aged 1–5 years and No chest indrawing, stridor or general danger signs.</p> <p>Severe pneumonia Cough or difficult breathing and any general danger sign or Chest indrawing or stridor in a calm child.</p> <p>In infants aged less than 2 months the presence of any of the following indicates severe pneumonia: cough or difficult breathing and breathing 60 times or more per minute or grunting or nasal flaring or fever or low body temperature or any general danger sign.</p> <p>General danger signs For children aged 2 months to 5 years: unable to drink or breastfeed; persistent vomiting; convulsions; lethargic or unconscious.</p>
Mode of transmission	Airborne, by droplets.
Incubation	Depends on the infective agent. Usually 2–5 days.
Period of communicability	Depends on the infective agent. Usually during the symptomatic phase.

EPIDEMIOLOGY

Burden	No country-specific incidence data are available at this time. However, pneumonia is reported as being one of the leading causes of death among children less than 5 years of age. The WHO African Region has the second highest ALRI burden globally after the South-East Asian Region and accounts for approximately 33.7 million new episodes every year.
Geographical distribution	Throughout the country.
Seasonality	No data available.

Alert threshold	An increase in the number of cases above the expected number for that time of the year in a defined area.
Recent epidemics in the country	No data available.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Movement of populations allows contact between non-immune and infected individuals and increases transmission of the pathogen.
Overcrowding	Yes	Overcrowding increases the risk of transmission.
Poor access to health services	Yes	Prompt identification and treatment of cases is the most important control measure. Poor access to health services can delay or prevent adequate treatment, without which the case-fatality rate can be very high (20% or more in emergency situations).
Food shortages	No	However, low birth weight, malnutrition, vitamin A deficiency and poor breastfeeding practices are important risk factors for development of the disease and increase its severity.
Lack of safe water and poor sanitation	Yes	Inadequate personal hygiene and hand washing with soap and water increase the risk of spread of respiratory infection.
Others	Yes	Indoor air pollution. Low temperatures may increase the relative risk of children acquiring pneumonia. Immunization against diphtheria, pertussis and measles reduces the impact and severity of disease.
Risk assessment conclusions		ALRI is likely to be a major cause of disease and death in children less than 5 years of age given the presence in Angola of major risk factors for ALRI transmission and development. Efforts must be made to improve early diagnosis and treatment with efficacious antibiotics particularly through raising community awareness, developing mobile clinics and training health-care workers.

PREVENTION AND CONTROL MEASURES

Case management	<p>The priority is the early recognition and appropriate treatment of cases.</p> <p>The first-line antibiotic for cases aged less than 5 years classified as pneumonia is co-trimoxazole; the second-line antibiotic is amoxicillin.</p> <p>Pre-referral antibiotics for severe cases that cannot tolerate oral antibiotics or for treatment of severe cases that cannot be referred are:</p> <ul style="list-style-type: none"> – intramuscular chloramphenicol for children aged 2 months up to 5 years; and – intramuscular benzylpenicillin <i>and</i> gentamicin for infants aged less than 2 months. <p>Children with fever, in addition to cough or difficult breathing, may also be treated for malaria according to their exposure to malaria risk (high versus low malaria risk areas) and laboratory results (blood film) if these services are available.</p> <p>Supportive measures such as continued feeding to avoid malnutrition, vitamin A if indicated, antipyretics to reduce high fever, and protection from cold (especially keeping young infants warm) are part of integrated case management. Prevention of low blood glucose is necessary for severe cases.</p>
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	<p>Integrated management of illness should be practised in any sick child seen by a provider trained in IMCI.</p> <p>Proper advice should be given to carers of non-severe cases on home-based care, including compliance with antibiotic treatment instructions.</p> <p>Signs of malnutrition should be assessed as this increases the risk of death due to pneumonia. Severely malnourished children (weight-for-height index <70%) should be referred to hospital.</p>
Prevention	<p>Health education on early danger signs for prompt care-seeking.</p> <p>Adequate feeding, including exclusive breastfeeding, to avoid malnutrition.</p> <p>Improved immunization coverage.</p>
Immunization	<p>Measles, diphtheria and whooping cough immunization are effective in reducing the impact of ALRI. Immunization coverage rates for these antigens are currently suboptimal in Angola.</p>

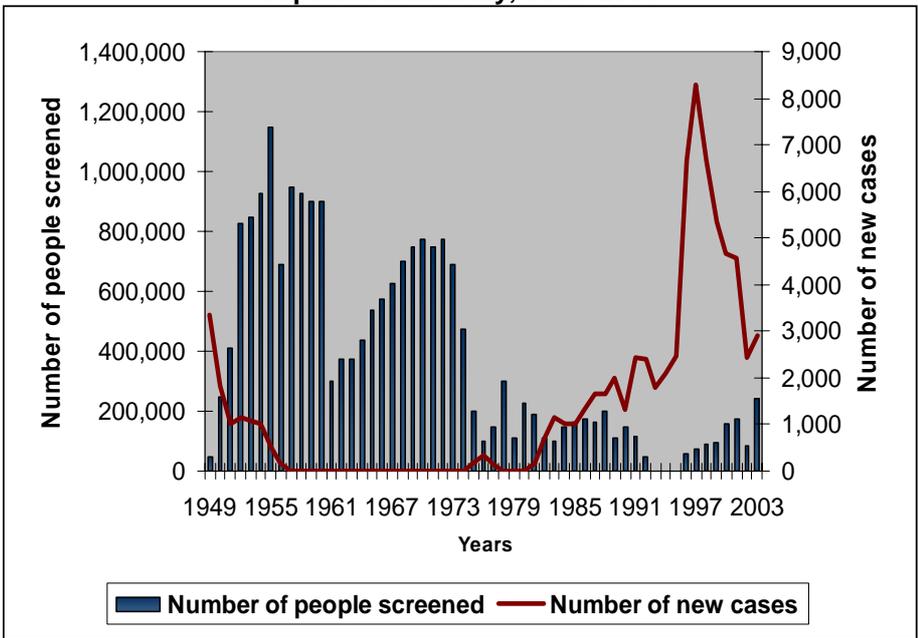
2. AFRICAN TRYPANOSOMIASIS (Sleeping sickness)

DESCRIPTION

Infectious agent	Protozoan: <i>Trypanosoma brucei gambiense</i> . Only the <i>T. b. gambiense</i> form of the disease is present in Angola.
Case definition	<p>Clinical description</p> <ul style="list-style-type: none"> • 1st stage (haemolympathic involvement): <ul style="list-style-type: none"> – A painful chancre (papular or nodular) at the primary site of tsetse fly bite (rare in <i>T.b. gambiense</i> infection). – Possibly fever, intense headache, insomnia, painless lymphadenopathy, anaemia, local oedema and rash. • 2nd stage (neurological involvement): <ul style="list-style-type: none"> – Parasites cross the blood–brain barrier and attack the central nervous system. – Cachexia, somnolence and signs of central nervous system involvement. <p>The disease may last for several months or even years. The natural progression of the disease (when not treated) leads to body wasting, somnolence, coma and death. The disease is always fatal without treatment.</p> <p>Laboratory tests available</p> <ul style="list-style-type: none"> • Serological: <ul style="list-style-type: none"> – Card agglutination trypanosomiasis test (CATT): for <i>T. b. gambiense</i> only. A negative CATT result indicates that there is no disease; a positive result must be confirmed by microscopy. – Immunofluorescent assay: for <i>T. b. rhodesiense</i> mainly and possibly for <i>T. b. gambiense</i>. • Parasitological: Detection (by microscopy) of trypanosomes in blood, lymph node aspirates or cerebrospinal fluid (CSF). <p>Case classification</p> <ul style="list-style-type: none"> • Suspected*: any case without direct demonstration of the parasite that is compatible with the clinical description and/or with positive serology. • Confirmed: a case with direct demonstration of the parasite, compatible or not with the clinical description. <ul style="list-style-type: none"> – 1st stage: parasite seen in blood and/or lymph nodes, with CSF containing no detectable trypanosomes and a leukocyte count $\leq 5/\mu\text{l}$. – Intermediate stage: parasite seen in blood and/or lymph nodes, with CSF containing no detectable trypanosomes and a leukocyte count 6–10/μl. – 2nd stage: CSF containing trypanosomes and/or a leukocyte count $>5/\mu\text{l}$. <p><i>* In the 1st stage or early in the 2nd stage of the disease there are often no clinical signs or symptoms classically associated with the disease. Suspicion is then based on local risk of contracting the disease and local disease historical background.</i></p>
Mode of transmission	The disease is transmitted primarily by the bites of infected tsetse flies (<i>Glossina</i> spp). Transmission is also possible through contamination with infected blood or through the placenta (congenital).
Incubation	In <i>T. b. gambiense</i> infection there is a long incubation period that can last several months, even years.
Period of communicability	The disease is communicable to the tsetse fly as long as the parasite is present in the blood of the infected person or animal (5–21 days after infective bite). Parasitaemia occurs in waves of varying intensity in untreated cases during all stages of the disease. Once infected, the tsetse fly remains infective for life (1–6 months).

EPIDEMIOLOGY

Burden	<p>Angola is among the countries with the highest prevalence of human African trypanosomiasis (HAT). The transmission rate is high. In some provinces the prevalence is between 20–50%, ahead of HIV/AIDS as a cause of mortality. Of the estimated 13.5 million people in the country, 4 million live in the endemic areas and are at risk of contracting the disease.</p> <p>Given the focal nature of the disease, prevalence rates should refer only to the areas at risk. Aggregation of data at national level is misleading and dilutes the problem. It is almost impossible to measure incidence rates of <i>T. b. gambiense</i> sleeping sickness because the variable and long asymptomatic period of the disease makes it impossible to know with any accuracy when infection began. There is little or no information on mortality outside hospitals, since most of deaths occur in rural areas with poor or non-existing civil registration systems. In particular, mortality in infants is difficult to measure, even with systematic screening, because of the well-known systematic underreporting of infant deaths. In addition, it is very difficult to obtain breakdowns by age or sex.</p> <p style="text-align: center;">Summary of epidemiological situation in each focus, 1998–2004</p> <table border="1"> <thead> <tr> <th>Name of focus (population at risk)</th> <th>Year</th> <th>Number of people screened</th> <th>Number of HAT confirmed cases</th> </tr> </thead> <tbody> <tr> <td>Cexito</td> <td>2004</td> <td>5 000</td> <td>50</td> </tr> <tr> <td rowspan="4">Mbanza Congo</td> <td>2003</td> <td>14 428</td> <td>232</td> </tr> <tr> <td>2002</td> <td>8 174</td> <td>226</td> </tr> <tr> <td>1998</td> <td>24 520</td> <td>700</td> </tr> <tr> <td>2004</td> <td>36 769</td> <td>182</td> </tr> <tr> <td rowspan="6">Bengo (354 677)</td> <td>2002</td> <td>11 670</td> <td>241</td> </tr> <tr> <td>2001</td> <td>18 052</td> <td>529</td> </tr> <tr> <td>2000</td> <td>no data available</td> <td>688</td> </tr> <tr> <td>1999</td> <td>no data available</td> <td>824</td> </tr> <tr> <td>1998</td> <td>no data available</td> <td>931</td> </tr> <tr> <td>2004</td> <td>75 426</td> <td>569</td> </tr> <tr> <td rowspan="4">Kwanza Norte (518 249)</td> <td>2003</td> <td>89 419</td> <td>873</td> </tr> <tr> <td>2002</td> <td>31 818</td> <td>628</td> </tr> <tr> <td>2001</td> <td>63 905</td> <td>1606</td> </tr> <tr> <td>2004</td> <td>8 494</td> <td>25</td> </tr> <tr> <td rowspan="3">Kuanza Sul (75 166)</td> <td>2003</td> <td>9 268</td> <td>35</td> </tr> <tr> <td>2001</td> <td>1 444</td> <td>40</td> </tr> <tr> <td>2004</td> <td>15 572</td> <td>58</td> </tr> <tr> <td rowspan="4">Malange (222 056)</td> <td>2003</td> <td>6 353</td> <td>25</td> </tr> <tr> <td>2002</td> <td>5 532</td> <td>48</td> </tr> <tr> <td>1998</td> <td>no data available</td> <td>37</td> </tr> <tr> <td>2004</td> <td>58 639</td> <td>229</td> </tr> <tr> <td rowspan="4">Uige (1 320 289)</td> <td>2003</td> <td>40 566</td> <td>670</td> </tr> <tr> <td>2002</td> <td>13 467</td> <td>546</td> </tr> <tr> <td>2001</td> <td>55 410</td> <td>1228</td> </tr> <tr> <td>2004</td> <td>58 760</td> <td>193</td> </tr> <tr> <td rowspan="3">Zaire (284 828)</td> <td>2003</td> <td>45 798</td> <td>338</td> </tr> <tr> <td>2002</td> <td>11 979</td> <td>359</td> </tr> <tr> <td>2001</td> <td>18 459</td> <td>359</td> </tr> <tr> <td rowspan="6">Luanda</td> <td>2004</td> <td>1 820</td> <td>10</td> </tr> <tr> <td>2003</td> <td>2 334</td> <td>271</td> </tr> <tr> <td>2002</td> <td>3 082</td> <td>398</td> </tr> <tr> <td>2001</td> <td>17 292</td> <td>815</td> </tr> <tr> <td>2000</td> <td>no data available</td> <td>673</td> </tr> <tr> <td>1999</td> <td>no data available</td> <td>786</td> </tr> <tr> <td>1998</td> <td>no data available</td> <td>593</td> </tr> </tbody> </table> <p>(Data source: WHO/CDS Trypanosomiasis control programme, 2005). Only 6% of the population at risk is under surveillance. The data available therefore do not show the true situation but rather the lack of screening in many foci. The real number of cases is much higher.</p>	Name of focus (population at risk)	Year	Number of people screened	Number of HAT confirmed cases	Cexito	2004	5 000	50	Mbanza Congo	2003	14 428	232	2002	8 174	226	1998	24 520	700	2004	36 769	182	Bengo (354 677)	2002	11 670	241	2001	18 052	529	2000	no data available	688	1999	no data available	824	1998	no data available	931	2004	75 426	569	Kwanza Norte (518 249)	2003	89 419	873	2002	31 818	628	2001	63 905	1606	2004	8 494	25	Kuanza Sul (75 166)	2003	9 268	35	2001	1 444	40	2004	15 572	58	Malange (222 056)	2003	6 353	25	2002	5 532	48	1998	no data available	37	2004	58 639	229	Uige (1 320 289)	2003	40 566	670	2002	13 467	546	2001	55 410	1228	2004	58 760	193	Zaire (284 828)	2003	45 798	338	2002	11 979	359	2001	18 459	359	Luanda	2004	1 820	10	2003	2 334	271	2002	3 082	398	2001	17 292	815	2000	no data available	673	1999	no data available	786	1998	no data available	593
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Geographical distribution	<p>Distribution of Gambian trypanosomiasis (<i>T. b. gambiense</i>) in Angola is patchy and corresponds closely to what was reported earlier in the 20th century. The endemic areas are mainly in the northern part of the country in Bengo, Kwanza norte, Kuanza Sul, Malange, Uige and Zaire provinces.</p> <p>An important feature of African trypanosomiasis is its focal nature. It tends to occur in circumscribed zones, and observed prevalence rates vary greatly from one geographical area to another, and even between one village and another within the same area.</p>
Seasonality	<p>The disease has no clearly obvious seasonal pattern.</p>
Recent epidemics in the country	<p>Given that only 6% of the population is under surveillance, no epidemics have been demonstrated in the country. Even without surveillance, passive case detection could provide data if an epidemic occurs.</p> <p style="text-align: center;">Trend of trypanosomiasis screening and cases reported nationally, 1949–2003</p>  <p style="text-align: center;">(Data source: WHO/CDS Trypanosomiasis control programme, 2005)</p>

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Risk of settlement in a high-transmission area.
Overcrowding	No	Tsetse density is not related to the density of the human population.
Poor access to health services	Yes	The complex nature of the disease requires efficient health structures and trained personnel for diagnosis and treatment.
Food shortages	No	
Lack of safe water and poor sanitation	No	The tsetse fly is not attracted by dirty water.
Others	Yes	It is a neglected disease.

<p>Risk assessment conclusions</p>	<p>Trypanosomiasis was discovered in Angola in the 19th century in region of Quixama, to the south of Luanda along the river Kwanza. The control of the disease began in a rudimentary way in 1901, and then was gradually strengthened during the colonial period. The first specialized unit for HAT control was created in 1926.</p> <p>While war and displacement have not directly resulted in the spread of the disease they have played a major role in causing the breakdown of surveillance, case detection and treatment. African trypanosomiasis had been nearly eliminated at the end of the 1950s (slightly more than 1000 cases in 1959) as a result of:</p> <ul style="list-style-type: none"> - systematic screening of populations living in sleeping sickness foci at village level (active case-finding) every 6 months (through mobile teams, mainly using palpation of enlarged lymph nodes and microscopic examination of lymph fluid); - compulsory treatment of infected individuals. <p>Cessation of control activities during the civil war that followed independence led to a resurgence of the disease. Despite sustained efforts by dedicated staff and continuous external funding, the annual incidence has gradually increased.</p> <p>It has been estimated that the real number of cases is probably twice as high as the reported figures. The current situation is characterized by substantial under-diagnosis, as mobile teams are able to reach only a fraction of endemic villages.</p> <p>Case-finding teams face tremendous operational difficulties. Control of the disease will not be achieved until active case finding identifies a high proportion of cases in the early stage of the disease.</p>
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PREVENTION AND CONTROL MEASURES

<p>Case management</p>	<p>Early screening and diagnosis are essential, as treatment is easier during the 1st stage of the disease (the patient does not present with psychiatric symptoms, fewer injections are required, and treatment poses less risk to the patient and can be given on an outpatient basis). Diagnosis and treatment require trained personnel; self-treatment is not possible. All confirmed cases must be treated as soon as possible. Most available drugs are old, difficult to administer in poor conditions and frequently unsuccessful.</p> <p><u>T. b. gambiense infection</u></p> <ul style="list-style-type: none"> • 1st stage: <ul style="list-style-type: none"> – Pentamidine (4 mg/kg/day) IM for 7 consecutive days on an outpatient basis. • 2nd stage: <ul style="list-style-type: none"> – Melarsoprol – hospitalization, with three series of injections administered with a rest period of 8–10 days between each series. A series consists of one injection of 3.6 mg/kg/day melarsoprol IV for 3 consecutive days. – In case of melarsoprol treatment failure, use eflornithine 400 mg/kg/day administered in slow infusions (lasting approximately 2 hours) four times a day. Infusions of 100 mg/kg are given every 6 hours. <p>Note: melarsoprol causes reactive encephalopathy in 5–10% of patients, with a fatal outcome in about half the cases. Treatment failure occurs in 10–30% of cases, probably because of pharmacological resistance. Increasing rates of resistance to melarsoprol (as high as 25%) have been reported from various countries.</p>
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	<p>A <i>human African trypanosomiasis treatment and drug resistance network</i> has been established by WHO. Four working groups deal with: (a) drug availability and accessibility; (b) coordination of drug development and clinical trials; (c) research on resistance and treatment schedules; (d) surveillance of resistance.</p> <p>Drug procurement</p> <p>Since 2001, a public–private partnership signed by WHO has made all drugs widely available. The drugs are donated to WHO. Requests for supplies are made to WHO by governments of disease-endemic countries and organizations working in association with these governments. Stock control and delivery of the drugs is undertaken by <i>Médecins Sans Frontières</i> in accordance with WHO guidelines. All the drugs are provided free of charge: recipient countries pay only the transport costs and customs charges.</p>
<p>Prevention</p>	<ul style="list-style-type: none"> • Routine preventive measures through public education on the following should be encouraged: <ul style="list-style-type: none"> – Avoidance of known foci of sleeping sickness and/or tsetse infestation. – Wearing suitable clothing (including long sleeves and long trousers) in endemic areas. – Routine use of insect repellents and mosquito nets. – Blood donation from those who live in (or have visited) epidemic areas should be prohibited. • Case detection and containment of the human reservoirs through periodical population screening and chemotherapy of cases remains the cornerstone of disease control for <i>T. b. gambiense</i> sleeping sickness. Active periodical screening (active case-finding) of the population of endemic foci by mobile screening teams is the best option, since infected subjects can remain asymptomatic and contagious for months or years before developing overt symptoms. Screening usually comprises CATTs of the entire population visited by teams. <p>Vector control through tsetse fly control programmes:</p> <ul style="list-style-type: none"> – Application of residual insecticides or aerosol insecticides – Use of insecticide-impregnated traps and screens – Destruction of tsetse habitats by selective clearing of the vegetation: clearing bushes and tall grasses around villages is useful when peridomestic transmission occurs. Indiscriminate destruction of vegetation is NOT recommended.
<p>Epidemic control</p>	<p>Active periodical screening (active case-finding) of the population of endemic foci by mobile screening teams is the best option for early detection of cases, since infected subjects can remain asymptomatic but infectious for months or years before developing overt symptoms. Screening usually comprises CATTs of the complete population visited.</p> <p>Identified cases must be promptly treated.</p> <p>Mass surveys to identify affected areas as part of vector control programmes should be implemented.</p> <p>Urgent implementation of tsetse fly control measures (e.g. aerosol insecticides sprayed by helicopter and fixed-wing aircraft).</p>

3. BACILLARY DYSENTERY (SHIGELLOSIS)

DESCRIPTION

Infectious agent	Bacterium: <i>Shigella</i> spp., of which <i>Shigella dysenteriae</i> type 1 causes the most severe disease and is the only strain responsible for epidemics.
Case definition	Case classification Suspected case: Diarrhoea with visible blood in the stools. Confirmed case: A case corresponding to the clinical case definition, with isolation of <i>Shigella</i> from stools.
Mode of transmission	Faecal–oral route, particularly contaminated water and food.
Incubation	Incubation period is usually 1–3 days. May be up to 1 week for <i>S. dysenteriae</i> type 1.
Period of communicability	During acute infection and up to 4 weeks after illness (without treatment); 2–3 days with appropriate treatment. Asymptomatic carriers exist.

EPIDEMIOLOGY

Burden	No data available.
Geographical distribution	No data available.
Seasonality	Cases are distributed throughout the year. Seasonal incidence patterns are not constant between years.
Alert threshold	In the absence of a clear epidemic threshold, an epidemic should be suspected if: <ul style="list-style-type: none"> – there is an unusual and sudden rise in the number of new cases or deaths due to bloody diarrhoea reported weekly; – there is an increase in the proportion of bloody diarrhoea among diarrhoeal cases; – there are five or more linked cases of bloody diarrhoea. Any of the above scenarios should lead to investigation of the disease agent by laboratory testing.
Recent epidemics in the country	No data available.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Increases transmission of the infectious agent.
Overcrowding	Yes	Very important. Facilitates transmission.
Poor access to health services	Yes	Early detection and containment of cases are paramount to reduce transmission. Without adequate treatment, the case-fatality rate with <i>S. dysenteriae</i> type 1 can be as high as 10% in children less than 10 years of age.

Food shortages	No	<p>However, malnutrition increases gastrointestinal tract susceptibility to invasiveness of the organism and severity of disease.</p> <p>It is important to continue breastfeeding infants and children during the illness.</p>
Lack of safe water and poor sanitation	Yes	The most important risk factor.
Others	Yes	Food stalls are a common source of contaminated meals.
Risk assessment conclusions		<p>Overcrowding, lack of safe water and inadequate sanitation promote the risk of infection.</p> <p>The risk of epidemics of <i>S. dysenteriae</i> type 1 is high in camp settings (up to one-third of the population at risk may be affected).</p> <p>Early detection of cases and institution of antibiotic therapy is essential.</p>

PREVENTION AND CONTROL MEASURES

Case management	<p>Early and appropriate therapy is very important; treatment with an effective antimicrobial can reduce the severity and duration of shigellosis. Selection depends on resistance patterns of the bacteria and drug availability.</p> <p>The problem of rapid acquisition of antimicrobial resistance in treating shigella dysentery in Africa is a cause of concern. It is therefore important to confirm the susceptibility of <i>S. dysenteriae</i> to antibiotics in the early stages of an outbreak of shigellosis. Resistance patterns may vary during the course of an outbreak and regular stool sampling is required. Ciprofloxacin is the current first-line antibiotic of choice recommended for treatment of <i>S. dysenteriae</i> type 1.</p> <p style="text-align: center;">Recommendations for treatment of <i>Shigella dysenteriae</i> type 1</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Patient group: treatment</th> <th style="text-align: left;">Dose</th> <th style="text-align: left;">Dosing frequency</th> <th style="text-align: left;">Duration of treatment</th> </tr> </thead> <tbody> <tr> <td>Adults: ciprofloxacin</td> <td>500 mg</td> <td>Twice a day</td> <td>3 days</td> </tr> <tr> <td>Children: ciprofloxacin</td> <td>250 mg/15 kg body weight</td> <td>Twice a day</td> <td>3 days</td> </tr> <tr> <td>For children aged less than 6 months: add zinc</td> <td>10 mg</td> <td>Daily</td> <td>2 weeks</td> </tr> <tr> <td>For children aged 6 months to 3 years: add zinc</td> <td>20 mg</td> <td>Daily</td> <td>2 weeks</td> </tr> </tbody> </table> <p style="text-align: center;"><i>Note: Rapidly evolving antimicrobial resistance is a real problem. Shigella is usually resistant to ampicillin and trimethoprim-sulfamethoxazole (TMP-SMX)</i></p> <p>Supportive treatment using oral rehydration salts (ORS), continued feeding (frequent small meals) and antipyretics to reduce high fever is also essential.</p> <p><i>S. dysenteriae</i> type 1 is often more severe or fatal in young children, elderly and malnourished individuals; prompt treatment with antibiotics is essential. If in short supply, antibiotics should be reserved for such high-risk groups.</p> <p>See Annex 6: <i>Case management of epidemic-prone diseases</i> of this toolkit.</p>	Patient group: treatment	Dose	Dosing frequency	Duration of treatment	Adults: ciprofloxacin	500 mg	Twice a day	3 days	Children: ciprofloxacin	250 mg/15 kg body weight	Twice a day	3 days	For children aged less than 6 months: add zinc	10 mg	Daily	2 weeks	For children aged 6 months to 3 years: add zinc	20 mg	Daily	2 weeks
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For children aged 6 months to 3 years: add zinc	20 mg	Daily	2 weeks																		

<p>Epidemic control</p>	<p>Inform the health authorities if one or more suspected cases are identified. Early detection and notification of epidemic dysentery, especially among adults, allows timely mobilization of resources needed for appropriate case management and control.</p> <p>Confirm the outbreak, following WHO guidelines.</p> <p>Rectal swabs from suspected cases should be collected and immediately shipped in a cold chain (0–4 °C) to a laboratory in an appropriate medium (e.g. Cary-Blair) for culture to confirm the diagnosis of <i>S. dysenteriae</i> type 1. (The viability of bacteria in this medium when refrigerated is 1–3 days, but this is variable). It is recommended that 10–20 samples are used to confirm the outbreak, the pathogen strain and antibiotic susceptibility. Fresh stool samples can be sent if Cary-Blair medium is not available, but the sample must reach the laboratory and be processed within 6 hours. Once the outbreak is confirmed, it is not necessary to obtain laboratory confirmation for every patient.</p> <p>Testing of <i>S. dysenteriae</i> type 1 isolates for antimicrobial susceptibility should be done at regular intervals to determine whether treatment guidelines remain appropriate. International referral laboratories are available to assist in identification of the organism and confirmation of the antimicrobial resistance pattern.</p> <p>Do not wait for laboratory results before starting treatment/control activities.</p>
<p>Prevention</p>	<p>See:</p> <ul style="list-style-type: none"> – <i>Diarrhoeal diseases (others)</i> and Appendix 3: <i>Safe water and sanitation</i> in this profile. – Guidelines for the control of shigellosis including epidemics due to <i>Shigella dysenteriae</i> type 1. <p style="margin-left: 40px;">In print, ISBN 92 4 1 159 233 0.</p> <p style="margin-left: 40px;">Available online at: http://www.who.int/child-adolescent-health/New_Publications/CHILD_HEALTH/ISBN_94_4_159233_0.pdf</p> – <i>Acute diarrhoeal diseases in complex emergencies: critical steps</i>. WHO/Geneva. WHO/CDS/CPE/ZFK/2004.6

4. CHOLERA

DESCRIPTION

Infectious agent	Bacterium: <i>Vibrio cholerae</i> .
Case definition	<p>A cholera outbreak should be suspected if:</p> <p>A person more than 5 years of age develops severe dehydration or dies from acute watery diarrhoea (clinical case definition);</p> <p>or</p> <p>There is a sudden increase in the daily number of patients with acute watery diarrhoea, especially patients who pass the "rice water" stools typical of cholera.</p> <p>Confirmed case: Isolation of <i>Vibrio cholerae</i> O1 or O139 from stools in any patient with diarrhoea.</p>
Mode of transmission	<p>Faecal–oral route:</p> <ol style="list-style-type: none"> 1. Drinking contaminated water 2. Eating food (fruits and vegetables) contaminated through <ul style="list-style-type: none"> – water – soil – contamination <i>during</i> preparation (rice, millet, food from street vendors) – contaminated seafood. 3. Person to person <ul style="list-style-type: none"> – when taking care of cholera patients; – through direct contact with bodies from deceased cholera patients (e.g. washing the body for funeral ceremonies). 4. Indirect contamination (hands)
Incubation	Incubation period is usually a few hours to 5 days.
Period of communicability	<p>During the symptomatic phase until 2–3 days after recovery. Very rarely for months.</p> <p>Asymptomatic carriers are common.</p>

EPIDEMIOLOGY

Burden	Number of cases and deaths due to cholera in Angola notified to WHO			
	Year	Number of cases	Number of deaths	Case-fatality rate
	1996	1 306	42	3.22
	1995	4 502	312	6.93
	1994	4 000	233	5.83
	1993	11 210	610	5.44
	1992	3 608	184	5.10
	1991	8 590	582	6.78
	1989	17 601	809	5.26
	1988	30 895	1542	4.99
	1987	16 222	1403	8.65
	1977	726	31	4.27
	1975	88	4	4.55
	1974	934	34	3.64
	1973	263	9	3.42
	1972	268	24	8.96

(Data source: WHO Global Atlas of Infectious Diseases, 2005).

Geographical distribution	No details available.
Seasonality	Cases are distributed throughout the year.
Alert threshold	Any suspected case must be investigated.
Recent epidemics in the country	No data has been available from the country since 1996.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Important for transmission of the infectious agent.
Overcrowding	Yes	Very important. Overcrowding increases the risk of contact with the germ contained in vomitus, excreta and contaminated water or food.
Poor access to health services	Yes	Early detection and containment of cases (isolation facilities) are paramount in reducing transmission.
Food shortages	No	
Lack of safe water and poor sanitation	Yes	The most important risk factor.
Others	No	Burial practices, such as the tradition of washing the corpses of cholera victims, public viewings of the bodies and placing them in a river, can play a major role in the spread of epidemics. Poor hygiene and lack of soap.

<p>Risk assessment conclusions</p>	<p>It is important to recognize that, even though data on cholera morbidity and mortality are not available since 1996, cholera outbreaks occur in Angola and cholera is a public health problem in the country.</p> <p>Lack of surveillance during the last 5 years is the most probable cause of non-reporting. The existence of a functional surveillance system is the key to address the problem, as it is crucial to report all available data on a regular basis to improve prevention and response capacity.</p> <p>As the risk of cholera outbreaks is high in overcrowded settings, preparedness is the key factor for successfully reducing associated mortality. Cholera treatment units should be prepared before the emergence of an outbreak in high-risk areas. When properly managed, cholera case-fatality rates (CFR) should be below 1% during outbreaks.</p>
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PREVENTION AND CONTROL MEASURES

<p>Case management</p>	<p>The mainstay of the case management of cholera is the treatment of dehydration using ORS or IV fluids (Ringer's lactate). IV rehydration should be used for severe cases only.</p> <p>Use of antibiotics (doxycycline/tetracycline) is not essential for disease treatment but in severe cases may be used to reduce the volume of diarrhoea (and of the rehydration solutions required), shorten its duration and the period of <i>Vibrio cholerae</i> excretion.</p> <p>The antimicrobial susceptibility pattern should be assessed in order to select the appropriate antibiotic.</p> <p>The CFR can be extremely high (5–40%) without proper treatment. With appropriate case management, the CFR should be <1%.</p>
<p>Epidemic control</p>	<p>Inform the health authorities immediately if one or more suspected cases are identified.</p> <p>Confirm the outbreak, following WHO guidelines, available at: www.who.int/csr/diseases/cholera</p> <p>Stool samples must be taken with a rectal swab and transported in Cary-Blair medium. If a transport medium is not available, a cotton-tipped rectal swab can be soaked in the liquid stool, placed in a sterile plastic bag, tightly sealed and sent to the laboratory.</p> <p>It is recommended that at least 10 cases are used to confirm the outbreak and identify antibiotic susceptibility. Once confirmed, it is not necessary to obtain laboratory confirmation for every patient.</p> <p>Do not wait for laboratory results before starting case management and control activities.</p> <ul style="list-style-type: none"> – Ensure prompt case management and confirm the diagnosis – Isolate severe cases in cholera treatment centres – Provide adequate health education – Set up ORS corners to increase the population's access to oral rehydration. – Ensure access to safe water and proper sanitation – Ensure hand washing with soap – Ensure safe food handling.

Prevention	See: <ul style="list-style-type: none"> – “Prevention” in <i>Diarrhoeal diseases (others)</i> – Appendix 3: <i>Safe water and sanitation</i> in this profile.
Immunization	<p>The use of oral cholera vaccine (OCV) is considered to be an additional public health tool to the usually recommended cholera control measures such as provision of safe water and adequate sanitation. OCVs may prove useful in the stable phase of emergencies as well as in endemic settings especially when given pre-emptively.</p> <p>OCV is recommended for populations to limit the risk of:</p> <ul style="list-style-type: none"> - occurrence of cholera outbreaks in endemic areas - spread and incidence of cholera during an outbreak. <p>Two OCV's are currently available: the killed cholera vaccine (WC/rBS; 2 doses) and the attenuated live vaccine (CVD103-HgR; single dose). Both vaccines have been licensed in some countries.</p> <p>Use of the attenuated live OCV is possible once an outbreak has started. The killed OCV cannot be used once an outbreak has started.</p> <p>For more specific information on cholera vaccines and their use, contact the Global Task Force on Cholera Control at WHO/HQ: cholera@who.int</p>
References	See: <ul style="list-style-type: none"> – <i>First steps for managing an outbreak of acute diarrhoea</i>. Geneva, World Health Organization, 2003 (WHO/CDS/CSR/NCS/2003.7 Rev1) – <i>Acute diarrhoeal diseases in complex emergencies: critical steps</i>. Geneva, World Health Organization, 2004 (WHO/CDS/CPE/ZFK/2004.6) – Annex 7: <i>Guidelines for collection of specimens for laboratory testing</i> in this toolkit. – <i>Laboratory methods for the diagnosis of epidemic dysentery and cholera</i>. Geneva, World Health Organization, 1999 (WHO/CDS/CSR/EDC/99.8). – http://www.who.int/topics/cholera/en/ – <i>Potential use of cholera vaccines in emergency situations</i>. Geneva, World Health Organization, 1999 (WHO/CDS/EDC/99.4) – <i>Cholera vaccines: A new public health tool? Geneva, December 2002</i>. Geneva, World Health Organization, 2004 (WHO/CDS/CPE/ZFK/2004.5). http://whqlibdoc.who.int/hq/2004/WHO_CDS_CPE_ZFK_2004.5.pdf – <i>Cholera outbreak: Assessing the outbreak response and improving preparedness</i>. Geneva, World Health Organization, 2004. (WHO/CDS/CPE/ZFK/2004.4)

5. DIARRHOEAL DISEASES (others)

DESCRIPTION

Infectious agent	Bacteria: such as <i>Salmonella</i> spp. (commonly <i>S. enteritidis</i> , <i>S. typhimurium</i>) and <i>Escherichia coli</i> . The bacteria that cause the most severe outbreaks are <i>Shigella dysenteriae</i> type 1 and <i>Vibrio cholerae</i> (see <i>Bacillary dysentery</i> and <i>Cholera</i>). Protozoa: such as <i>Entamoeba histolytica</i> , <i>Giardia lamblia</i> and <i>Cryptosporidium parvum</i> . Viruses: such as rotavirus and Norwalk virus.
Case definition	Clinical case definition Three or more abnormally loose or fluid stools over a period of 24 hours.
Mode of transmission	Faecal–oral route, particularly contaminated water and food.
Incubation	<i>Salmonella</i> generally requires an 8–48 hour incubation period, whereas <i>E. coli</i> is typically longer at 2–8 days (median of 3–4 days). The duration of the disease in both cases is usually 2–5 days. The average incubation period is 2–4 weeks for <i>E. histolytica</i> , 7–10 days for <i>G. lamblia</i> and 7 days for <i>C. parvum</i> . The incubation period for <i>rotavirus</i> is about 48 hours, and symptoms may last for up to 1 week.
Period of communicability	During the acute stage of the disease and for duration of faecal excretion. Temporary <i>Salmonella</i> carriers can continue to exist for several months.

EPIDEMIOLOGY

Burden	No data available.
Geographical distribution	Throughout the country.
Seasonality	No data available.
Alert threshold	An increase in the number of cases above the expected number compared with the same period in previous years in a defined area.
Recent epidemics in the country	No data available.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Can facilitate transmission of the pathogen and importations.
Overcrowding	Yes	Facilitates transmission.
Poor access to health services	Yes	Early detection and containment of the cases are paramount in reducing transmission.

Food shortages	No	However, malnutrition increases gastrointestinal tract susceptibility to invasiveness of some organisms and severity of disease.
Lack of safe water and poor sanitation	Yes	<p>The most important risk factor. Prevention of diarrhoeal diseases depends on the provision and use of safe water, adequate sanitation and health education. The supply of adequate quantities of water should be one of the highest priorities for camp planners. The emergency requirement is 20 litres/person per day.</p> <p>Common sources of infection in emergency situations are:</p> <ul style="list-style-type: none"> – contaminated water sources (e.g. by faecally-contaminated surface water entering an incompletely sealed well) or during storage (e.g. by contact with hands soiled by faeces); – shared water containers and cooking pots.
Others	Yes	Poor hygiene; lack of soap; contaminated food items.
Risk assessment conclusions		<p>Diarrhoeal diseases are a major cause of morbidity and mortality in emergency situations. This is mainly caused by an inadequate water supply in terms of quality and quantity, insufficient, poorly-maintained sanitation facilities, overcrowding and poor hygiene practices.</p> <p>In camp situations, diarrhoeal diseases have accounted for between 25% and 40% of deaths in the acute phase of the emergency. More than 80% of deaths are among children aged less than 2 years.</p>

PREVENTION AND CONTROL MEASURES

Case management	<p>Reduction of mortality caused by diarrhoeal disease is primarily related to effective management of dehydration, particularly in children.</p> <ul style="list-style-type: none"> • <u>Prevention</u> – give recommended home fluid and oral rehydration salts (ORS). • <u>Treatment of dehydration</u> – with ORS for mild to moderate dehydration, or with IV fluids (Ringer's lactate) for severe dehydration, is the mainstay of the management of diarrhoeal illness. • Use of antibiotics depends on the infectious agent. • Resume feeding with a normal diet when vomiting has stopped. It is important to separate those who are eating from those who are not. Food should be cooked on site. Continue breastfeeding infants and young children.
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Epidemic control	<ul style="list-style-type: none"> • Inform the health authorities immediately if an increase in the number of cases above the expected number is identified. • Confirm the outbreak, following WHO guidelines. • Ensure proper case management and epidemic control activities.
Prevention	<p>The prevention of diarrhoeal diseases depends on the provision and use of safe water, adequate sanitation and health education.</p> <p>Safe drinking-water Provision of an adequate and safe supply, collection and storage system. Provision of information on the importance of clean water and appropriate household storage of water (See Annex 3: <i>Safe water and sanitation</i>).</p> <p>Safe disposal of human excreta Provision of adequate facilities for the disposal of human waste. Provision of information on the importance of human waste disposal, use of sanitation covers and correct maintenance of sanitation facilities.</p> <p>Food safety Provision of adequate food storage facilities (for both uncooked and cooked food), cooking utensils, adequate quantity of water and fuel to allow for cooking and re-heating. Health education on the importance of food safety and safe food handling.</p> <p>Hand washing with soap Provision of soap in sufficient quantities for hand washing, bathing and laundry needs. Health education on the relationship between disease spread and lack of or poor hand washing before eating, after toileting, before food preparation and after cleaning/changing children.</p> <p>Breastfeeding Provision of information on the protective qualities of breastfeeding and the importance of breastfeeding ill children. Practical support for breastfeeding ill children.</p>
References	<p>See:</p> <ul style="list-style-type: none"> – <i>The treatment of diarrhoea: A manual for physicians and other senior health workers</i>. 4th Revision. ISBN 92 4 159318 0. Geneva, World Health Organization, 2005 (http://www.who.int/child-adolescent-health/New_Publications/CHILD_HEALTH/ISBN_92_4_159318_0.pdf) – <i>Acute diarrhoeal diseases in complex emergencies: critical steps</i>. Geneva, World Health Organization, 2004 (WHO/CDS/CPE/ZFK/2004.6) – <i>First steps for managing an outbreak of acute diarrhoea</i>. Geneva, World Health Organization, 2003 (WHO/CDS/CSR/NCS/2003.7 Rev1) – Annex 7: <i>Guidelines for collection of specimens for laboratory testing</i> in this toolkit. – <i>Laboratory methods for the diagnosis of epidemic dysentery and cholera</i>. Geneva, World Health Organization, 1999 (WHO/CDS/CSR/EDC/99.8).

6. DIPHTHERIA

DESCRIPTION

Infectious agent	Bacterium: <i>Corynebacterium diphtheriae</i>
Case definition	<p><u>Clinical description</u> Upper respiratory tract illness with laryngitis or pharyngitis or tonsillitis plus adherent membranes on tonsils or nasopharynx.</p> <p><u>Laboratory confirmation</u> Isolation of <i>C. diphtheriae</i> from a clinical specimen.</p> <p><u>Case classification</u> Suspected case: not applicable. Probable case: a case that meets the clinical description. Confirmed case: probable case confirmed by laboratory or epidemiologically-linked to a laboratory-confirmed case. Carrier: presence of <i>C. diphtheriae</i> in nasopharynx, no symptoms. NOTE: persons with positive <i>C. diphtheriae</i> identification but who do not meet the clinical description (i.e. asymptomatic carriers) must not be reported as probable or confirmed cases.</p>
Mode of transmission	<p>Contact (usually direct, rarely indirect) with the respiratory droplets of a case or carrier.</p> <p>In rare cases, the disease may be transmitted through foodstuffs (raw milk has served as a vehicle).</p>
Incubation	Usually 2–5 days, occasionally longer.
Period of communicability	Until virulent <i>C. diphtheriae</i> have disappeared from discharges and lesions; usually 2 weeks or less and seldom more than 4 weeks. The rare chronic carrier can shed <i>C. diphtheriae</i> for 6 months or more. The disease is usually not contagious 48 hours after antibiotics are instituted.

EPIDEMIOLOGY

Burden	Number of cases reported nationally in Angola			
	Year	Cases	Year	Cases
	2004	No data available	1995	No data available
	2003	16	1994	No data available
	2002	0	1993	23
	2001	0	1992	No data available
	2000	0	1991	40
	1999	0	1990	64
	1998	0	1989	105
	1997	No data available	1985	9
	1996	No data available	1980	No data available
	(Data provided by MOH through WHO-UNICEF Joint Reporting Form and WHO Regional Office for Africa)			
Geographical distribution	Throughout the country.			
Seasonality	No data available.			
Alert threshold	One suspected, probable or confirmed case must be investigated.			
Recent epidemics	None recorded.			

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Allows importation and facilitates transmission.																																												
Overcrowding	Yes	Crowded conditions facilitate transmission.																																												
Poor access to health services	Yes	<ul style="list-style-type: none"> – Prevents access to routine immunization services. – Early detection and containment of cases reduce transmission. 																																												
Food shortages	No																																													
Lack of safe water and poor sanitation	No																																													
Others	Yes	<p>Low vaccination coverage (<80%).</p> <p>Diphtheria–Tetanus–Pertussis (DTP3) vaccination: national coverage</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Year</th> <th style="width: 25%;">Coverage (%)</th> <th style="width: 25%;">Year</th> <th style="width: 25%;">Coverage (%)</th> </tr> </thead> <tbody> <tr> <td>2004</td> <td>59</td> <td>1994</td> <td>27</td> </tr> <tr> <td>2003</td> <td>46</td> <td>1993</td> <td>30</td> </tr> <tr> <td>2002</td> <td>47</td> <td>1992</td> <td>21</td> </tr> <tr> <td>2001</td> <td>41</td> <td>1991</td> <td>26</td> </tr> <tr> <td>2000</td> <td>31</td> <td>1990</td> <td>24</td> </tr> <tr> <td>1999</td> <td>22</td> <td>1989</td> <td>18</td> </tr> <tr> <td>1998</td> <td>45</td> <td>1988</td> <td>12</td> </tr> <tr> <td>1997</td> <td>41</td> <td>1987</td> <td>10</td> </tr> <tr> <td>1996</td> <td>28</td> <td>1980</td> <td>No data available</td> </tr> <tr> <td>1995</td> <td>42</td> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: center; font-size: small;">(Data source: WHO-UNICEF immunization coverage estimates, 2005)</p>	Year	Coverage (%)	Year	Coverage (%)	2004	59	1994	27	2003	46	1993	30	2002	47	1992	21	2001	41	1991	26	2000	31	1990	24	1999	22	1989	18	1998	45	1988	12	1997	41	1987	10	1996	28	1980	No data available	1995	42		
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Risk assessment conclusions		Outbreaks can occur when social or natural conditions lead to overcrowding of susceptible groups, especially infants and children. This frequently occurs when there are large-scale movements of non-immunized populations.																																												

PREVENTION AND CONTROL MEASURES

Introduction	<p>The control of diphtheria is based on three measures:</p> <ul style="list-style-type: none"> – ensuring high population immunity through vaccination (primary prevention); – rapid investigation and treatment of contacts (secondary prevention of spread); – early diagnosis and proper case management (tertiary prevention of complications and deaths).
Immunization	<p>Immunize the population at risk as soon as possible. In an epidemic involving adults, immunize groups that are most affected and at highest risk.</p> <p>Repeat immunization procedures 1 month later to provide at least two doses to recipients.</p> <p>Diphtheria–toxoid-containing vaccine (preferably Td – a combination of diphtheria and tetanus toxoids with reduced diphtheria content) should be given.</p> <p>To ensure injection safety during immunization, auto-disable syringes and safety boxes are recommended. Safe disposal of used sharps should be ensured.</p>

Case management	<p>Diphtheria antitoxin and antibiotic therapy are the cornerstone of therapy for diphtheria.</p> <p>The antitoxin neutralizes the diphtheria toxin only before its entry into cells. It is therefore critical that diphtheria antitoxin be administered as soon as a presumptive diagnosis has been made.</p> <p>Antibiotic therapy, by killing the organism, has three benefits:</p> <ul style="list-style-type: none"> – termination of toxin production; – improvement of local infection; – prevention of spread of the organism to uninfected persons. <p><i>Do not wait for laboratory results before starting treatment/control activities.</i></p> <p><u>Patients</u></p> <p>Diphtheria antitoxin IM (20 000–100 000 units) in a single dose, immediately after throat swabs have been taken.</p> <p>plus</p> <p>Procaine penicillin IM (25 000–50 000 units/kg/day for children; 1.2 million units/day for adults in two divided doses) or parenteral erythromycin (40–50 mg/kg/day to a maximum of 2 g/day) until the patient can swallow;</p> <p>then Oral penicillin V (125–250 mg four times) a day, or oral erythromycin (40–50 mg/kg/day with a maximum of 2 g/day) in four divided doses.</p> <p><i>Antibiotic treatment should be continued for a total period of 14 days.</i></p> <p><u>Isolation</u></p> <p>Pharyngeal diphtheria – strict isolation is necessary.</p> <p>Cutaneous diphtheria – strict isolation is not necessary. However barrier precautions must be observed in order to prevent contact with cutaneous lesions.</p> <p>NOTE: Clinical diphtheria does not necessarily confer natural immunity, and patients should therefore be vaccinated before discharge from a health facility.</p> <p><u>Close Contacts</u>¹</p> <p>Surveillance for 7 days for all persons with close contact, regardless of vaccination status, and throat culture.</p> <p>All must receive a single dose of benzathine penicillin G IM (600 000 units for children aged <6 years; 1.2 million units for children aged ≥6 years). If culture is positive, give antibiotics as for patients above.</p> <p><u>Carriers</u></p> <p>All must receive a single dose of benzathine penicillin G IM (600 000 units for children aged <6 years; 1.2 million units for children aged ≥6).</p>
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¹ Close contacts include household members and other persons with a history of direct contact with a case, as well as health-care staff exposed to oral or respiratory secretions of a case.

<p>Epidemic control</p>	<p>Inform the health authorities if one or more suspected cases are identified.</p> <p>Confirm the suspected outbreak, following WHO guidelines.</p> <p>Investigate any probable case; check if it fulfils the case definition, record date of onset, age and vaccination status.</p> <p>Confirm the diagnosis; collect both nasal and pharyngeal swabs for culture and swabs from any wounds or skin lesions. If appropriate facilities are available, determine the biotype and toxigenicity of <i>C. diphtheriae</i>.</p> <p>Identify close contacts and define population groups at high risk. Adult contacts must avoid contact with children and must not be allowed to undertake food handling until proved not to be carriers.</p> <p>Implement outbreak response measures; give priority to case management and immunization of population in areas not yet affected where the outbreak is likely to spread.</p> <p>Immunize the population at risk as soon as possible, especially children. In an epidemic involving adults, immunize groups that are most affected and at highest risk. Repeat immunization procedures 1 month later to provide at least two doses to recipients.</p> <p>In endemic situations, preferably Td vaccine should be given.</p> <p>To ensure injection safety during immunization, auto-disable syringes and safety boxes are recommended. Safe disposal of used sharps should be ensured.</p>
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7. EBOLA AND MARBURG HAEMORRHAGIC FEVERS

DESCRIPTION

Infectious agent	Ebolavirus and Marburgvirus belong to the <i>Filoviridae</i> family. The genus Ebolavirus has three subtypes reported in Africa: Côte d'Ivoire, Sudan, and Zaire. At least seven different lineages have been identified for Marburgvirus genus.
Case definition	<p><u>Clinical description</u></p> <p>Presentation may be very nonspecific. Initial symptoms include acute fever, diarrhoea that can be bloody (referred to as <i>diarrhée rouge</i> in francophone Africa) and vomiting. Headache, nausea and abdominal pain are common.</p> <p>Conjunctival injection, dysphagia and haemorrhagic symptoms (nosebleeds, bleeding gums, vomiting of blood, blood in stools, purpura) may further develop. Some patients may show a maculopapular rash on the trunk.</p> <p>Dehydration and significant wasting occur as the disease progresses. At a later stage there is frequent involvement of the central nervous system, manifested by somnolence, delirium or coma. The case fatality rate ranges from 50% to 90% according to the virus genus and subtypes.</p> <p><u>Laboratory criteria</u></p> <p>Confirmatory:</p> <ul style="list-style-type: none"> - positive ELISA antigen detection or IgM capture, or - positive virus isolation (only in a laboratory of biosafety level 4), or - positive skin biopsy (immunohistochemistry), or - positive PCR with sequence confirmation, or - Serological conversion for IgG antibodies between two samples collected at 1 week interval. <p><u>Case classification*</u></p> <p>Suspected: a case that is compatible with the clinical description.</p> <p>Probable (in epidemic situation):</p> <ul style="list-style-type: none"> - any person having had contact with a clinical case and presenting with acute fever, or - any person presenting with acute fever and three of the following: headache, vomiting/nausea, loss of appetite, diarrhoea, intense fatigue, abdominal pain, general or articular pain, difficulty in swallowing, difficulty in breathing, hiccups, or - any unexplained death. <p>Confirmed: any suspected or probable case that is laboratory-confirmed.</p> <p>Contact (in epidemic situation): an asymptomatic person having had physical contact within the past 21 days with a confirmed or probable case or their body fluids (e.g. care for patient, participation in a burial ceremony, handling of potentially infected laboratory specimens).</p> <p>* Case classification should be tailored according to circumstances locally identified in the field (e.g. including contact with sick animals or animals with abnormal behaviour).</p>

Mode of transmission	<p>Person-to-person transmission by direct contact (spread of droplets onto mucous membranes) or indirectly through infected blood, secretions, organs, semen and fomites.</p> <p>Risk is highest during the late stages of illness when there is vomiting, diarrhoea or haemorrhage. Risk during the incubation period is low. Under natural conditions, airborne transmission among humans has not been documented. Nosocomial infections have been frequent.</p>
Incubation	<p>Incubation period for:</p> <p>Marburg: 3–9 days.</p> <p>Ebola: 2–21 days.</p>
Period of communicability	<p>During the entire course of the disease. The virus can live in testis or eyes (escaping the immune response) for up to 6 months.</p>

EPIDEMIOLOGY

Burden	<p>Confirmed cases reported in 1995 (Ebola), 1999 (Marburg) and 2005 (Marburg).</p>
Geographical distribution	<p>Ebola: Outbreaks have occurred in Bandundu province in neighbouring Democratic Republic of the Congo. The entire rain forest area is considered as endemic for Ebola.</p> <p>Marburg: Outbreaks have occurred in Uige, Luanda, Malange, Kuanza Norte provinces.</p>
Seasonality	<p>No clearly evident seasonal pattern for Ebola or Marburg.</p>
Alert threshold	<p>One suspect case must lead to an alert.</p>
Recent epidemics in the country	<p>Ebola: No outbreaks of Ebola have been reported from Angola. However, outbreaks have occurred (1995) in Bandundu province of Democratic Republic of the Congo which neighbours Uige and Malanje provinces in Angola.</p> <p>Marburg: October 2004–August 2005: As of 23 August 2005, the Ministry of Health, Angola, has reported 374 cases including 329 deaths (CFR 88%) of Marburg virus haemorrhagic fever. Cases were identified in Uige, Luanda and Cabinda provinces. Of these, 368 cases, including 323 deaths were reported in Uige province which was the epicentre of the outbreak. A total of 158 were laboratory confirmed.</p> <p>WHO provides ongoing to support Ministry of Health efforts to strengthen infection control in hospitals, to intensify case detection and contact tracing, to improve public understanding of the disease and its modes of transmission and to ensure a national plan of action for control of such outbreaks.</p>

RISK FACTORS FOR INCREASED TRANSMISSION

Population movement	Yes	In case of an outbreak, population movement can contribute to the spread of infection to non-affected areas. Contacts under daily follow-up should be encouraged to limit their movements through community sensitization and social mobilization.
Overcrowding	Yes	Prompt isolation of suspected cases is a key control strategy. All conditions favouring contact with a sick person, their clothing and bedding, constitute a risk factor for increased transmission.
Poor access to health services	Yes	Health centres are essential as alert networks, not for providing treatment. Prompt identification of cases is paramount in rapidly implementing control measures.
Food shortages	No	
Lack of safe water and poor sanitation	No	
Others	Yes	Hunting-related activities and eating dead animals found in the forest.
Risk assessment conclusions		<p>Ebola:</p> <p>The reservoir is not known and it is therefore difficult to evaluate the risk of transmission. The implementation of control measures can also be difficult given cultural practices, such as the eating of primate meat.</p> <p>With the exception of Uganda, Ebola outbreaks have always occurred in ecologically similar areas in neighbouring Democratic Republic of the Congo: these areas could represent the biotope of the reservoir. Moreover, there are indications that similar climatic patterns are associated with Ebola outbreaks. Monitoring climatic variables could help in the identification of high-risk areas.</p> <p>Future priorities include the identification of the reservoir, in order to better target public health measures.</p> <p>Marburg:</p> <p>The largest Marburg outbreak occurred in Angola from October 2004–August 2005. The source of the outbreak was not elucidated. The last confirmed case of Marburg died on 21 July 2005 in Songo municipality, Uige Province.</p> <p>The source of Marburg virus infections remains obscure. Because of the disease's rarity and lethality, risk factors for transmission of Marburg virus have not been extensively investigated. It is therefore difficult to predict and evaluate the risk of transmission in Angola. In order to better define public health interventions, identification of the reservoir by epidemiological and epizootic investigations along with direct observations made during outbreaks, are a current priority.</p>

PREVENTION AND CONTROL MEASURES

<p>Case management</p>	<p>Specific therapy: not currently available for filoviral infections</p> <p>Supportive treatment:</p> <ul style="list-style-type: none"> - Analgesic drugs - Antimicrobial drugs (to avoid secondary infections) - Fluid replacement. <p>Implementation of barrier nursing practices:</p> <p>In order to prevent secondary infections, contact with the patient's lesions and body fluids should be minimized using standard isolation precautions:</p> <ul style="list-style-type: none"> - isolation of patients - restriction of access to patients wards - use of protective clothing - safe disposal of waste - disinfection of all non-disposable supplies and equipment - safe burial practices. <p>These can be implemented despite limited resources (see WHO/CDC. <i>Infection control for viral haemorrhagic fevers in the African care setting</i>. Geneva, World Health Organization, 1998 (WHO/EMC/EST/98.2).</p>
<p>Epidemic control</p>	<p>Epidemics of the disease in health-care institutions with poor hygiene standards can be dramatically amplified through contact with patients or body fluids from infected patients (blood, vomitus, urine, stools, semen, saliva). The main public health threat is posed by the potential for explosive nosocomial infection. Strict adherence to isolation precautions with all patients has been shown to reduce the risk of transmission.</p> <p>The strategy for controlling Filovirus outbreaks in the field is based on five key elements:</p> <p>(1) Establish an effective and efficient coordination mechanism for the response</p> <p>(2) Set up a social mobilization and health education programme the objectives of which are to inform the public and restrict practices that promote transmission</p> <ul style="list-style-type: none"> - avoid contact with body fluids of an Ebola haemorrhagic fever (EHF) patient - seek treatment early and avoidance of harmful funeral practices - boil or burn all clothing of an EHF patient - use protective methods when handling the patient and EHF patient articles - avoid consumption of dead animal meat found in the forest <p>(3) Guarantee a safe and humane management of the patients and the deaths</p> <ul style="list-style-type: none"> - establish isolation ward including barrier nursing techniques - admit and provide correct case management - conduct safe funerals that allow the process of mourning - implement infection control measures in all health-care settings <p>(4) Create an active surveillance system to identify new cases and follow-up their contacts for 21 days (isolate if ill)</p> <p>(5) Ensure psychosocial support to the patients, their families and the health-care workers.</p> <p>(6) Make available all required logistics and institute effective security measures.</p>

Prevention	<p>The following key elements are essential in the prevention of explosive epidemics in areas potentially subject to Ebola and Marburg disease:</p> <ul style="list-style-type: none">• Coordinate epidemiological surveillance programme in humans and animals, notably send alert messages to the population when animal outbreaks are reported• Social mobilization and health education of the community• Train health workers in EHF-prone regions in the use of isolation precautions and universal isolation precautions.
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8. HIV/AIDS

DESCRIPTION

Infectious agent	Human immunodeficiency virus (HIV). Two types have been identified: HIV-1 and HIV-2, with similar epidemiological characteristics. HIV-2 is less pathogenic than HIV-1. In Angola both types are represented.
Case definition	<p>AIDS case definition Acquired immunodeficiency syndrome (AIDS) is the late clinical stage of HIV infection, defined as an illness characterized by one or more indicator diseases.</p> <p>With a view to facilitating the scale-up of access to antiretroviral therapy (ART), the WHO African Region has revised the staging system for HIV infection. The document titled <i>Interim WHO clinical staging on HIV/AIDS and HIV/AIDS case definitions for surveillance guidelines (WHO/HIV/2005.02)</i> outlines recent revisions made by WHO to the clinical staging of HIV/AIDS and to case definitions for HIV/AIDS disease surveillance.</p> <p>These guidelines are based on an international drafting meeting held in Saas Fee, Switzerland in June 2004 and on recommendations made by experts from African countries as follows:</p> <p><u>Revised WHO clinical staging of HIV/AIDS for adults and adolescents*</u></p> <p>Primary HIV infection Asymptomatic infection Acute retroviral syndrome.</p> <p>Clinical stage 1 Asymptomatic Persistent generalized lymphadenopathy (PGL)</p> <p>Clinical stage 2 Moderate unexplained weight loss (<10% of presumed or measured body weight) Recurrent respiratory tract infections (sinusitis, bronchitis, otitis media, pharyngitis) Herpes zoster Angular cheilitis Recurrent oral ulcerations Papular pruritus eruptions Seborrhoeic dermatitis Fungal nail infections of fingers</p> <p>Clinical stage 3 <i>Conditions where a presumptive diagnosis can be made on basis of clinical signs or simple investigations:</i> Severe weight loss (>10% of presumed or measured body weight) Unexplained chronic diarrhoea for longer than 1 month Unexplained persistent fever (intermittent or constant for longer than 1 month) Oral candidiasis Oral hairy leukoplakia Pulmonary tuberculosis (TB) diagnosis in last 2 years Severe presumed bacterial infections (e.g. pneumonia, empyema, pyomyositis, bone or joint infection, meningitis, bacteraemia) Acute necrotizing ulcerative stomatitis, gingivitis or periodontitis</p>

Conditions where confirmatory diagnostic testing is necessary
 Unexplained anaemia (<8 g/dl), and or neutropeania (<500 WBC/mm³) for more than one month

Clinical staging 4

Conditions where a presumptive diagnosis can be made on the basis of clinical signs or simple investigations:

- HIV wasting syndrome
- Pneumocystis pneumonia
- Recurrent severe or radiological visualized bacterial infections
- Chronic herpes simplex infection (orolabial, genital or anorectal or more than 1 month's duration)
- Oesophageal candidiasis
- Extrapulmonary TB
- Kaposi's sarcoma
- Central nervous system (CNS) toxoplasmosis
- HIV encephalopathy

Conditions where confirmatory diagnostic testing is necessary

- Extrapulmonary cryptococcosis including meningitis
- Disseminated non-tuberculous mycobacterial infection
- Progressive multifocal leukoencephalopathy (PML)
- Candidiasis of trachea, bronchi or lungs
- Cryptosporidiosis
- Isosporiasis
- Visceral herpes simplex infection
- Cytomegalovirus (CMV) infection (retinitis or of an organ other than liver, spleen or lymph nodes)
- Any disseminated mycosis (e.g. histoplasmosis, coccidiomycosis, penicilliosis)
- Lymphoma (cerebral or B cell non-Hodgkin)
- Invasive cervical carcinoma
- Visceral leishmaniasis

** The UN defines adolescents as persons aged 10–19 years but in the document the category of adults and adolescents comprises people aged 15 years and over for surveillance purposes.*

Revised WHO clinical staging of HIV/AIDS for infants and children

Clinical stage 1

- Asymptomatic
- Persistent generalized lymphadenopathy (PGL)

Clinical stage 2

- Hepatosplenomegaly
- Papular pruritic eruptions
- Seborrhoeic dermatitis
- Extensive human papilloma virus infection
- Extensive molluscum contagiosum
- Fungal nail infections
- Recurrent oral ulcerations
- Lineal gingival erythema (LGE)
- Angular cheilitis
- Parotid enlargement
- Herpes zoster
- Recurrent or chronic respiratory tract infections (otitis media, otorrhea, sinusitis)

Clinical stage 3

Conditions where a presumptive diagnosis can be made on the basis of clinical signs or simple investigations

- Moderate unexplained malnutrition not adequately responding to standard therapy
- Unexplained persistent diarrhoea (14 days or more)
- Unexplained persistent fever (intermittent or constant, for longer than 1 month)
- Oral candidiasis (outside neonatal period)
- Oral hairy leukoplakia
- Acute necrotizing ulcerative gingivitis/periodontitis
- Pulmonary TB
- Severe recurrent presumed bacterial pneumonia

Conditions where confirmatory diagnostic testing is necessary

- Chronic HIV-associated lung disease including bronchiectasis
- Lymphoid interstitial pneumonitis (LIP)
- Unexplained anaemia (haemoglobin <8 g/dl), and or neutropenia (WBC <1000/mm³) and or thrombocytopenia (platelets <50 000/mm³) for more than 1 month

Clinical stage 4

Conditions where a presumptive diagnosis can be made on the basis of clinical signs or simple investigations

- Unexplained severe wasting or severe malnutrition not responding adequately to standard therapy
- Pneumocystis pneumonia
- Recurrent severe presumed bacterial infections
- Recurrent presumed bacterial infections (e.g. empyema, pyomyositis, bone or joint infection, meningitis, but excluding pneumonia)
- Chronic herpes simplex infection (oralabial or cutaneous of more than 1 month's duration)
- Extrapulmonary TB
- Kaposi's sarcoma
- CNS toxoplasmosis (outside the neonatal period)
- HIV encephalopathy

Conditions where confirmatory diagnostic testing is necessary

- CMV infection (CMV retinitis or infection of organs other than liver, spleen or lymph nodes; onset at age 1 month or more)
- Extrapulmonary cryptococcosis including meningitis
- Any disseminated endemic mycosis (e.g. extrapulmonary histoplasmosis, coccidiomycosis, penicilliosis)
- Cryptosporidiosis
- Isosporiasis
- Disseminated non-tuberculous mycobacteria infection
- Candidiasis of trachea, bronchi or lungs
- Visceral herpes simplex infection
- Acquired HIV-associated rectal fistula
- Cerebral or B cell non-Hodgkin lymphoma
- Progressive multifocal leukoencephalopathy (PML)
- HIV-associated cardiomyopathy or HIV-associated nephropathy

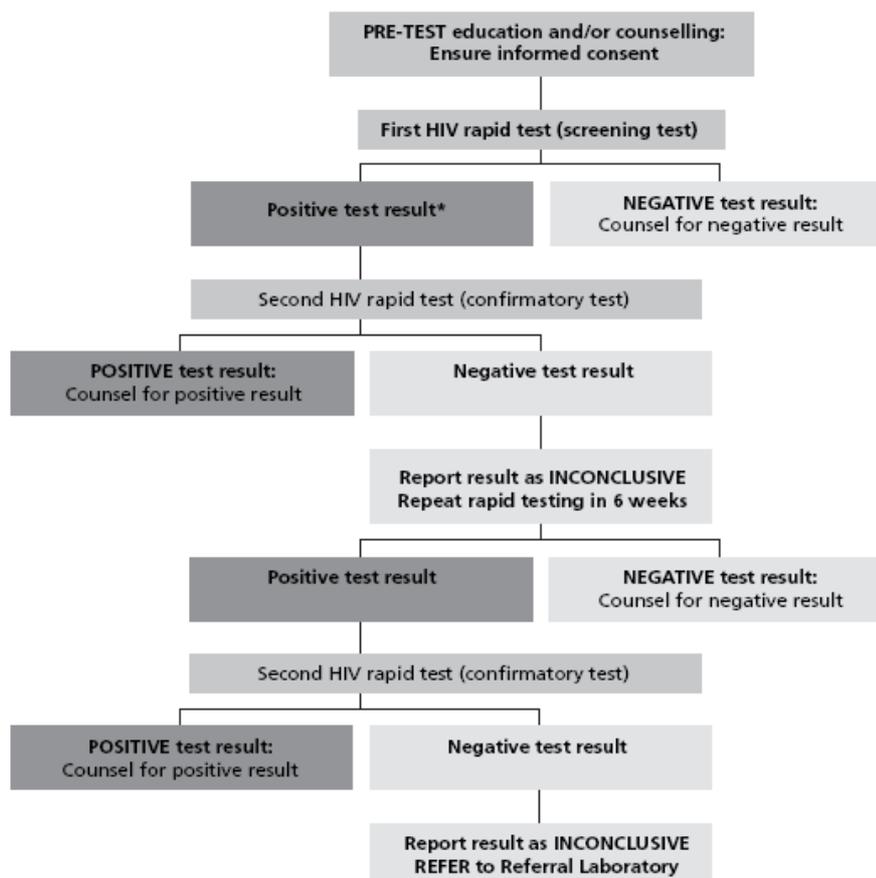
Laboratory evidence of HIV

This is most commonly done by detecting HIV antibody in serum samples using enzyme-linked immunosorbent assay (ELISA or EIA). When this test is positive, it must be confirmed with another test of higher specificity such as the Western blot, the indirect fluorescent antibody (IFA) test or a second ELISA test that is methodologically and/or antigenically independent of the first.

The rapid tests that are recommended by WHO have been evaluated at WHO collaborating centres and have levels of sensitivity and specificity comparable with WHO-recommended ELISA tests. The use of rapid HIV tests affords several advantages in emergency and disaster settings including:

- Rapid tests that do not require refrigeration will be more suitable for remote and rural areas and sites without a guaranteed electricity supply. Long shelf-life is also important especially for remote areas and sites performing smaller numbers of tests.
- Many rapid tests require no laboratory equipment and can be performed in settings where electrical and water supplies need not be guaranteed.
- Some rapid tests can detect HIV antibodies in whole blood (finger-prick samples) as well as serum/plasma, and testing may therefore be performed by non-laboratory personnel with adequate training and supervision.

Algorithm for use of rapid HIV tests in testing and counselling services



Source: *Rapid HIV tests: guidelines for use in HIV testing and counselling services*. Geneva. World Health Organization, 2004. ISBN 92 4 159181 1

Mode of transmission	<p>Sexual intercourse (vaginal or anal) with an infected partner, especially in presence of a concurrent ulcerative or non-ulcerative sexually transmitted infection (STI). The primary route of HIV infection is heterosexual.</p> <p>Infected mother to her child during pregnancy, labour and delivery or through breastfeeding.</p> <p>Transfusion of infected blood or blood products.</p> <p>Contaminated needles, syringes, other injecting equipment and injecting solutions (contamination often occurs when drug solutions are mixed or when multiple users draw up solutions from a single container).</p>
Incubation	<p>Variable. On average, time from HIV infection to clinical AIDS in Angola is 8–10 years, although AIDS may be manifested in less than 2 years or be delayed in onset beyond 10 years.</p> <p>Incubation times are shortened in resource-poor settings and in older patients. They can be prolonged by provision of primary prophylaxis for opportunistic infections or antiretroviral (ARV) treatment.</p>
Period of communicability	<p>Any person who is infected with HIV may pass the infection to another through the routes of transmission described above.</p> <p>Infectiousness is observed to be high during the initial period after infection. Studies suggest it increases further with increasing immune deficiency, clinical symptoms and presence of other STIs.</p>

EPIDEMIOLOGY

Burden	<p>Estimated number* of adults and children living with HIV/AIDS in Angola at the end of 2004</p> <table border="1" data-bbox="453 1187 1404 1859"> <thead> <tr> <th></th> <th>Low estimate</th> <th>High estimate</th> <th>Total (average)</th> </tr> </thead> <tbody> <tr> <td>Adults and children</td> <td>97 000</td> <td>600 000</td> <td>240 000</td> </tr> <tr> <td>Adults (15–49 years)</td> <td>88 000</td> <td>540 000</td> <td>2 200 000</td> </tr> <tr> <td>Children (0–<15 years)</td> <td>8 600</td> <td>61 000</td> <td>23 000</td> </tr> <tr> <td>Women (15–49) (male to female ratio, 1.1) with higher prevalence/proportion among the group of women aged 15–39 years and lower prevalence in the group aged >39 years</td> <td>130 000</td> <td>50 000</td> <td>300 000</td> </tr> <tr> <td>Adult prevalence rate (%)</td> <td>1.6%</td> <td>9.41.6%</td> <td>3.99.4%</td> </tr> <tr> <td>Estimated number of people in need of ARV treatment</td> <td>34 500</td> <td></td> <td></td> </tr> <tr> <td>Estimated number of people receiving ARV treatment by August 2004</td> <td>3 000</td> <td></td> <td></td> </tr> <tr> <td>Prevalence of HIV among adults with tuberculosis in 2002 (15–49 years)</td> <td>25.9%</td> <td></td> <td></td> </tr> </tbody> </table> <p>*including all people with HIV infection, whether or not they have developed symptoms of AIDS</p> <p>Estimated number of adults and children who died of AIDS in Angola during 2003:</p> <p>Adults and children: 21 000</p> <table border="1" data-bbox="453 2016 1404 2083"> <tr> <td>Estimate:</td> <td>9 600</td> <td>45 000</td> </tr> </table>		Low estimate	High estimate	Total (average)	Adults and children	97 000	600 000	240 000	Adults (15–49 years)	88 000	540 000	2 200 000	Children (0–<15 years)	8 600	61 000	23 000	Women (15–49) (male to female ratio, 1.1) with higher prevalence/proportion among the group of women aged 15–39 years and lower prevalence in the group aged >39 years	130 000	50 000	300 000	Adult prevalence rate (%)	1.6%	9.41.6%	3.99.4%	Estimated number of people in need of ARV treatment	34 500			Estimated number of people receiving ARV treatment by August 2004	3 000			Prevalence of HIV among adults with tuberculosis in 2002 (15–49 years)	25.9%			Estimate:	9 600	45 000
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	<p>Estimated number of children who have lost their mother or father or both parents to AIDS and who were alive and under age 17 in Angola at the end of 2003:</p> <p>Current living orphans: 110 000 Low estimate 74 000 High estimate 160 000 (Data source: UN AIDS Epidemiological fact sheet – Angola, 2004 update http://www.who.int/GlobalAtlas/PDFFactory/HIV/EFS_PDFs/EFS2004_AO.pdf)</p> <p>Among the 1000 military personal tested in 2001, HIV prevalence was 3.2%. In Angola the vulnerable groups are sex workers, truck drivers, mine workers, military personnel, youth, street children, pregnant women, displaced people, refugees and resettled populations, prisoners, drug users, blood transfusion recipients, traditional healers and birth attendants, health workers' children infected including orphans.</p>																																																																
Geographical distribution	<p>Nationwide.</p> <p>There has been little surveillance among women attending antenatal care clinics (ANC) during the past decade. The latest available ANC surveillance data are from 2002. HIV prevalence in Luanda was 4.6%, ranging from 2.6–8.0% in the different sites. The HIV prevalence among women attending ANC was 0.8% in Malnge, 1.4% in Lunda-Sul, 3.2% in Benguela, and 3.3% in Cabinda province. Among 864 sex workers aged 15–45 years, HIV prevalence was 32.8% in 2001.</p>																																																																
Seasonality	Not applicable.																																																																
Alert threshold	One suspected case must be investigated.																																																																
Recent trends in the country	<p>Information available on HIV seroprevalence in Angola is limited. It is therefore difficult to ascertain recent trends. No significant regional difference has been observed in relation to HIV seroprevalence but the prevalence in rural areas is generally higher than in urban areas. In Luanda, where about 25% of the population resides, the estimated prevalence rate in 2001 was 8.6%.</p> <p style="text-align: center;">Reported HIV cases: 1979 to 2003</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Year</th> <th style="text-align: left;">No. of cases</th> <th style="text-align: left;">Year</th> <th style="text-align: left;">No. of cases</th> </tr> </thead> <tbody> <tr> <td>2003</td> <td>12 576</td> <td>1989</td> <td>105</td> </tr> <tr> <td>2002</td> <td>No data available</td> <td>1988</td> <td>86</td> </tr> <tr> <td>2001</td> <td>No data available</td> <td>1987</td> <td>36</td> </tr> <tr> <td>2000</td> <td>1271</td> <td>1986</td> <td>86</td> </tr> <tr> <td>1999</td> <td>453</td> <td>1985</td> <td>4</td> </tr> <tr> <td>1998</td> <td>1186</td> <td>1984</td> <td>0</td> </tr> <tr> <td>1997</td> <td>1121</td> <td>1983</td> <td>0</td> </tr> <tr> <td>1996</td> <td>465</td> <td>1982</td> <td>0</td> </tr> <tr> <td>1995</td> <td>427</td> <td>1981</td> <td>0</td> </tr> <tr> <td>1994</td> <td>361</td> <td>1980</td> <td>0</td> </tr> <tr> <td>1993</td> <td>339</td> <td>1979</td> <td>0</td> </tr> <tr> <td>1992</td> <td>290</td> <td>TOTAL</td> <td>6 637</td> </tr> <tr> <td></td> <td></td> <td colspan="2" style="text-align: center;">(1979 – 2003)</td> </tr> <tr> <td>1991</td> <td>271</td> <td></td> <td></td> </tr> <tr> <td>1990</td> <td>214</td> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: center;">Date of last report: 22 November 2001 (Data source: UN AIDS)</p>	Year	No. of cases	Year	No. of cases	2003	12 576	1989	105	2002	No data available	1988	86	2001	No data available	1987	36	2000	1271	1986	86	1999	453	1985	4	1998	1186	1984	0	1997	1121	1983	0	1996	465	1982	0	1995	427	1981	0	1994	361	1980	0	1993	339	1979	0	1992	290	TOTAL	6 637			(1979 – 2003)		1991	271			1990	214		
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RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	In emergency situations, population movement often causes breakdown in family and social ties, and erodes traditional values and coping strategies. It can result in high-risk sexual behaviour, which increases risk of HIV spread.
Overcrowding	Yes	Groups with differing levels of HIV awareness, and differing rates of infection, are often placed together in temporary locations, such as refugee camps, where there is greater potential for sexual contact. Overcrowding can also influence injecting drug use patterns and result in increased risk of sharing contaminated injection equipment (this has been noted in refugee camps).
Poor access to health services	Yes	Without adequate medical services, STIs, if left untreated in either partner, greatly increase the risk of acquiring HIV. Important materials for HIV prevention, particularly condoms, are likely to be lacking in an emergency situation. In emergency situations, services for drug dependence treatment usually do not exist. Access to sterile injection equipment will be less likely. In Angola, voluntary counselling and testing, pre- and post-test counselling, prevention of STIs and reproductive health services are provided mostly in the capital, Luanda. National guidelines for ARV treatment have been developed. The National Strategic Plan 2003–2008 includes strategies for the provision of ARVs free of charge. The first line regimen is zidovudine + lamivudine + nevirapine (US\$ 172/yr per patient) plus nelfinavir (US\$ 358/yr per patient).
Food shortages	Yes	The need for food is paramount in emergency situations, and exchanging sex for money to buy food and other essentials can occur (see <i>Sex work</i> below).
Lack of safe water and poor sanitation	No	
Others	Yes	<p>Sexual violence</p> <ul style="list-style-type: none"> Displaced persons are often physically and socially powerless, with women and children at particular risk of sexual coercion, abuse or rape. Sexual violence carries a higher risk of infection because the person violated cannot protect herself or himself from unsafe sex, and because the virus can be transmitted more easily if body tissues are torn during violent sex. <p>Sex work</p> <ul style="list-style-type: none"> Exchange of sexual favours for basic needs, such as money, shelter, security, etc. is common in or around refugee camps, and inevitably involves both the refugee and host communities. Both sex workers and clients are at risk of HIV infection if unprotected sex is practised <p>Injecting drug use</p> <ul style="list-style-type: none"> In Angola, 11.7% (535 individuals) of AIDS cases reported from the beginning of the epidemic to the end of 2000 had contracted the disease by injecting drugs. In the typical conditions of an emergency, it is highly likely that the drug injectors will be sharing needles, a practice that carries a very high risk of HIV transmission if one of the people sharing is infected.

	<p>Unsafe blood transfusions</p> <ul style="list-style-type: none"> • Transfusion with HIV-infected blood is a highly efficient means of transmitting the virus. In emergency situations, when regular transfusion services have broken down, it is particularly difficult to ensure blood safety. <p>Adolescent Health</p> <p>Children in camp settings may have little to occupy themselves which may lead them to experiment with sex earlier than children in other situations.</p>
<p>Risk assessment conclusions</p>	<p>The first case of AIDS in Angola was diagnosed in 1985. Until recently, national efforts to conduct surveillance were hindered by internal armed conflict which has ravaged the country since 1975. Despite social disruption, rapid decline in health-care provision, and the decrease in funding in health education programmes, HIV seroprevalence rates remain relatively low and stable in the country. War and social disruption can facilitate the spread of HIV. The relatively stable seroprevalence rates probably reflect a dynamic balance between the numbers of new infections and the number of deaths from AIDS; high incidence where the new cases replace losses caused by the high mortality may hide a high incidence among young people.</p> <p>By the end of 2003, an estimated 240 000 adults and children were living with HIV/AIDS in Angola. The adult prevalence was estimated at 3.9%. The distribution of people living with HIV/AIDS (cumulative) demonstrates that about 60% are 20–39 years old, the age group with the highest economic productivity in Angola. According to government sources, a cumulative number of 12 576 AIDS cases had been reported by the end of 2003 (WHO/3 by 5 initiative, July 2004), corresponding to about 10% of the estimated AIDS cases in Angola. This underreporting may result from the inadequate perception of the magnitude of the infection and the low levels of knowledge.</p> <p>The National Strategic Plan on HIV/AIDS 2003–2008 identifies vulnerable groups as those that are potentially exposed, individually or collectively, because of the structural, institutional, political and cultural variation that makes them susceptible to infection with HIV. Using these criteria, the following vulnerable groups have been identified; sex workers, mine workers, truck drivers, military personnel, youth, street children, pregnant women, prisoners, drug users, blood transfusion recipients, traditional healers, traditional birth attendants, health workers and children infected and affected by HIV, including orphans. All stakeholders involved in humanitarian activities must be sensitized to the importance of addressing HIV in tandem with all other activities. Activities should include HIV prevention (promotion of safer sexual behaviours, treatment of STIs, blood safety) and care and support for people living with HIV/AIDS (PLWHA). They must reach vulnerable populations and address the needs of women and children.</p> <p>Antenatal care clinic (ANC) attendees</p> <p>Limited information on HIV seroprevalence among pregnant women attending ANC in Angola is available. Use of sentinel sites has been inconsistent. In Luanda, the major urban area, HIV infection rates among women attending ANC increased from 0.3% in 1986 to 0.7% in 1992, and 4.6% in 2002. HIV prevalence among women attending ANC in Cabinda province was 6–8% during 1992–1996 compared to 3.3% in 2002.</p> <p>Overall health sector response and capacity</p> <p>About 65% of the health units were destroyed during the war. The capacity of the services to detect and treat chronic diseases is greatly incapacitated. Only about 30% of the population has access to health services.</p>

	<p>The institutional capacity of the national HIV/AIDS Programme and human resource capacity across the health sector as a whole urgently needs to be strengthened. Additional support is needed in management, human resource planning, planning for the development of ARV therapy capacity, procurement and national supply chain management, community preparedness and understanding.</p> <p>The ARV therapy need for 2005 is estimated to be about 34 500. The WHO 3 by 5 treatment target for 2005 is 16 000 (based on 50% of need). The Angolan Government has declared a national treatment target for 5500 for 2005.</p>
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PREVENTION AND CONTROL MEASURES

<p>Case management</p>	<p>Provide high-quality care and support to all PLWHA, including counselling, psychosocial support, treatment for opportunistic infections (e.g. TB), palliative care and access to ARV therapy where feasible.</p> <p>Support PLWHA to live normal and productive lives that are free of stigmatization and discrimination.</p>
<p>Prevention</p>	<p><u>Reduce sexual transmission</u></p> <ul style="list-style-type: none"> • Awareness and life skills education, especially youth, ensuring that all people are well informed of what does, and does not, constitute a mode of transmission; of how and where to acquire condoms free of charge and medical attention if necessary; and information on basic hygiene. • Condom promotion, which would ensure that good quality condoms are freely available to those who need them, using culturally sensitive instructions and distribution. • STI management, including for sex workers, using the syndromic STI management approach, with partner notification and promotion of safer sex. <p><u>Reduce mother-to-child transmission of HIV</u></p> <ul style="list-style-type: none"> • The primary prevention of HIV among women, especially young women. • Avoiding unintended pregnancies among HIV-infected women and promoting family planning methods, particularly in women who are infected with HIV. • Preventing the transmission of HIV from infected pregnant women to their infants by: <ul style="list-style-type: none"> – using an ARV prophylaxis regimen; – avoiding unnecessary obstetrical invasive procedures, such as artificial rupture of membranes or episiotomy; and – modifying infant feeding practices (replacement feeding given with a cup when acceptable, feasible, affordable, sustainable and safe; otherwise exclusive breastfeeding for the first months of life is recommended); <p>In Angola, it is estimated that 15% of AIDS cases are caused by mother-to-child transmission.</p> <p><u>Blood safety</u></p> <ul style="list-style-type: none"> • HIV testing of all transfused blood • Avoid non-essential blood transfusion • Recruitment of safe blood donor pool <p><u>Prevention among injecting drug users</u></p> <ul style="list-style-type: none"> • Ready access to sterile needles, syringes and other injection equipment (and disposal of used equipment). • HIV risk reduction education and counselling for injecting drug users (including peer outreach when possible). • Drug dependence treatment services, including substitution treatment (e.g. methadone) where possible. • Access to STI and HIV/AIDS treatment for injecting drug users.

	<p>Universal precautions</p> <ul style="list-style-type: none"> • Washing hands thoroughly with soap and water, especially after contact with body fluids or wounds. • Using protective gloves and clothing when there is risk of contact with blood or other potentially infected body fluids. • Safe handling and disposal of waste material, needles and other sharp instruments. Proper cleaning and disinfection of medical instruments between patients. <p>Physical protection</p> <p>The protection of the most vulnerable, especially women and children, from violence and abuse is not only an important principle of human rights but is also essential for reducing the risk of HIV infection.</p>
<p>Protecting health-care workers</p>	<p>In order to reduce nosocomial transmission, health workers should strictly adhere to universal precautions with all patients and laboratory samples – whether or not they are known to be infected with HIV.</p> <p>Health-care workers should have access to voluntary counselling, testing and care. Often, health workers deployed in complex emergencies experience significant occupational stress and those tested, as part of the management of occupational exposures, will require additional support.</p>
<p>Voluntary counseling and testing programmes</p>	<p>The establishment of voluntary counselling and testing services to help individuals make informed decisions about HIV testing should be considered when relative stability is restored. At times, persons are coerced into testing or are required to make decisions about testing when they are suffering acute or post-traumatic stress disorders.</p> <p>As refugees are often tested before resettlement in other countries, it is critical that they receive counselling on the legal and social implications of the test. Often, migration or temporary residency status is contingent on the applicant having HIV antibody seronegative status.</p> <p>Post-test counselling is essential for both seronegative and seropositive results. Refugees, internally displaced persons (IDPs) and conflict survivors who are already traumatized will require additional psychosocial support if they test seropositive. Typically the support networks of displaced persons are disrupted and suicide risk assessment forms an important part of post-test counselling in a refugee or conflict context.</p> <p>Testing of orphaned minors should be done with the consent of their official guardians only where there is an immediate health concern or benefit to the child. There should be no mandatory screening before admittance to substitute care.</p>
<p>Immunization</p>	<p>Asymptomatic HIV-infected children should be immunized with the Expanded Programme on Immunization (EPI) vaccines.</p> <p>Symptomatic HIV-infected children should NOT receive either BCG or yellow fever vaccine.</p>

9. INFLUENZA

DESCRIPTION

Infectious agent	<i>Influzaviruses A, B and C. Influzavirus A</i> has several subtypes, of which two, H1N1 and H3N2, are currently of epidemiological significance for humans. Avians harbor 16 HA and 9 NA subtypes of influenza A.
Case definition	<p><u>Clinical case definition</u> A person with sudden onset of fever of >38 °C and cough or sore throat in the absence of other diagnoses.</p> <p><u>Case classification</u> Suspected: a case that meets the clinical case definition. Confirmed: a case that meets the clinical case definition and is laboratory confirmed (used mainly in epidemiological investigation rather than surveillance).</p> <p><u>Laboratory criteria for diagnosis</u></p> <ul style="list-style-type: none"> – Virus isolation or detection of viral RNA by reverse transcriptase/polymerase chain reaction (RT/PCR) or other assay on throat, nose, and/or nasopharyngeal swab or respiratory secretion aspirate (nasopharyngeal, tracheal or bronchoalveolar lavage) or gargled saline from the suspected case. – Detection of influenza viral antigen in infected cells by ELISA. – Rapid antigen capture test on throat, nose, and/or nasopharyngeal, tracheal or bronchoalveolar aspirate or lavage. – Antibody detection in serum specimens: tenfold rise in antibody titre between pre-and post-infection samples (paired samples collected 2 weeks apart). <p>Influenza may be diagnosed clinically by typical symptoms during a recognized seasonal epidemic period when reliable surveillance data are available.</p>
Mode of transmission	Droplet and fine droplet nuclei (airborne). Direct and indirect contact is also considered.
Incubation	It takes between 1–4 days (usually 2 days) for a person to develop symptoms.
Period of communicability	The patient is infectious from 1–2 days before onset of symptoms. Infectiousness can last up to 7 days after onset of illness in adults and up to 21 days after onset in children less than 12 years of age.

EPIDEMIOLOGY

Burden	No data available. However, respiratory disease outbreaks have occurred in Bosobolo (Equateur Province), Bosongo and Mbisiangando, and Kasai Occidental Provinces of neighbouring Democratic Republic of the Congo.
Geographical distribution	No data available.
Seasonality	No data available.
Alert threshold	An increase in the number of cases above what is expected for a certain period of the year.
Recent epidemics in the country	In May 2003, cases of Severe Acute Respiratory Syndrome (SARS) were reported from Luanda Province by the WHO office. However no further details are available.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Influx of non-immune population into areas where the virus is circulating or of infected individuals into areas previously free of the virus.
Overcrowding	Yes	Very important and facilitates rapid spread.
Poor access to health services	Yes	Prompt identification and treatment of the cases (especially treatment of secondary bacterial pneumonia by antimicrobials) are the most important control measures. Without proper treatment, the case-fatality rate is high (most vulnerable populations are young children, elderly aged 65 years and older and those who are chronically immunocompromised, including the malnourished).
Food shortages	Yes	Low birth weight, malnutrition, vitamin A deficiency and poor breastfeeding practices are important risk factors for infection and development of the disease.
Lack of safe water and poor sanitation	Yes	May reduce hand-washing practices and facilitate spread.
Others	Yes	Indoor air pollution. Lower temperatures in the mountainous east and southern highlands may increase risk of development of pneumonia. Smoking is a risk factor for more severe disease.
Risk assessment conclusions		Because of respiratory droplet transmission and potential population displacement, overcrowding and malnutrition, Angola is at high risk of influenza outbreaks with the likelihood of severe consequences (notably high mortality among young children). These conditions are probably already contributing to a large burden of acute respiratory illness in the countries.

PREVENTION AND CONTROL MEASURES

Case management	<p>Early recognition and appropriate treatment of complicated cases is priority.</p> <p>For most people, influenza is a self-limiting illness that does not require specific treatment. Aspirin and other salicylate-containing medications should be avoided in children and adolescents less than 18 years of age because of occasional severe complications (Reye's syndrome). Paracetamol may be used for management of fever as clinically indicated.</p> <p>Antiviral drugs may be used for specific and early treatment. M2 inhibitors (amantadine or rimantadine for influenza A only) and neuraminidase inhibitors (oseltamivir or zanamivir for influenza A and B) given within the first 48 hours can reduce symptoms and virus titres in respiratory secretions. Neuraminidase inhibitors also reduce complications which need antibiotics and lead to hospitalization.</p> <p>Antiviral resistance to treatment is more likely to develop with the use of M2 inhibitors. Therefore, where possible, neuraminidase inhibitors (oseltamivir) should be selected for treatment provided they are registered for use in the country. If supplies are limited, antiviral treatment should be reserved for patients at high risk of complication (e.g. elderly or those with underlying chronic conditions).</p> <p>M2 inhibitors (influenza A only) and neuraminidase inhibitors (influenza A and B) are generally well-tolerated and effective for prevention if taken during the season immediately after exposure to influenza.</p> <p>Patients should be monitored for the development of bacterial complications. Only then should antibiotics be administered accordingly. Other supportive therapies such as assisted ventilation may be needed.</p>
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Isolation is impractical in most circumstances because of the highly transmissible nature of the virus and delay in diagnosis.

Neuramidase inhibitor: Oseltamivir

There is no need to adapt dosages for elderly people.

However, dosage should be adapted for people suffering moderate renal failure (creatinine clearance <30 ml/min). Oseltamivir should not be administered to any person who has experienced an allergic reaction to the drug in the past nor to pregnant women unless clinical circumstances indicate necessity (note lack of data on safety in this population). Women put on this treatment should refrain from breastfeeding.

Oseltamivir treatment schedules

Age	Dosage	Duration
Adults	75 mg twice a day	5 days
Children		
• 15 kg <23 kg	45 mg twice a day	5 days
• 23 kg < 40 kg	60 mg twice a day	5 days
• >40kg	75 mg twice a day	5 days

Doses should be reduced for individuals with decreased renal function

M2 inhibitors: Amantadine and Ramantadine

Amantadine treatment schedules

Weight and/or age	Dosage	Duration
Up to 45 kg (9 years)	5 mg/kg/day in two divided doses up to a maximum of 150 mg/day	5 days
Over 45 kg (9–64 years)	100 mg twice a day	5 days
Aged 65 years and over	Less than 100 mg once a day	5 days

Rimantadine treatment schedules

Age	Dosage	Duration
13–64 years	100 mg twice daily	5 days
65 years and over	Less than 100 mg once a day	5 days

	<p>Doses should be reduced for individuals with decreased renal or hepatic function</p>
<p>Epidemic control measures</p>	<p>Influenza is a disease under international surveillance. Countries are encouraged to report seasonal outbreaks to WHO. Member States are requested to report all laboratory-confirmed cases of influenza A/H5 to WHO.</p> <p>Surveillance of influenza is essential for:</p> <ul style="list-style-type: none"> • Characterization of the epidemic influenza pattern in terms of seasonality, risk group, burden of disease and impact, in order to allow for yearly planning of prevention (vaccination) and response activities (medical and non-medical interventions). • Identification of changes in the epidemiological pattern over the year to allow timely triggering for implementation of planned medical and non-medical response measures (e.g. start the use of antiviral treatment). • Characterization of circulating influenza virus strains to support updating of the composition of the annual influenza vaccine for the northern and southern hemispheres and allow early detection of new influenza A virus subtypes. • Monitoring emergence of viruses resistant to recommended antiviral treatments. <p>Minimum data elements need to be compiled in accordance with WHO recommended surveillance guidelines (WHO/CSR/CDS/ISR/99.2, under revision).</p> <p>Effective planning and health education about immunization programmes for patients at high risk and their health-care providers must be ensured. Additionally, adequate supplies of antiviral drugs must be maintained to treat patients at high risk and essential personnel in the event of emergence of a pandemic strain for which no suitable vaccine may be available at the time.</p> <p>In case of detection of cases of human infection with avian influenza viruses, please refer to the WHO documentation <i>Guidance for the timely sharing of influenza viruses/specimens with potential to cause human influenza pandemics</i>, available at: http://www.who.int/csr/disease/avian_influenza/guidelines/Guidance_sharing_viruses_specimens/en/index.html</p> <p>Other related WHO guidelines and recommendations are available at: http://www.who.int/csr/disease/avian_influenza/en/index.html</p>
<p>Prevention</p>	<p>Because the virus is highly transmissible, it is very difficult to control an influenza epidemic once it has started. Vaccination is the best way to prevent serious complications and deaths. Ideally, the vaccine should be given each year before the influenza (outbreak) season (or epidemic) is expected in the community.</p> <p>The public and health-care professionals should be encouraged to have annual vaccination with WHO recommended vaccine, especially staff working with groups at high risk (elderly, persons with chronic underlying disease) and educated in basic personal hygiene. Influenza is transmissible during the asymptomatic incubation period.</p> <p>When appropriate vaccine is not available, chemoprophylaxis (antivirals) should be considered for close contacts, non-immunized persons or groups at high risk of complications. Mass prophylaxis is not recommended.</p> <p>See WHO policy at http://www.who.int/docstore/wer/pdf/2002/wer7728.pdf (<i>under revision</i>).</p>

<p>Immunization</p>	<p>WHO recommends annual immunization of at-risk persons (mainly the elderly, malnourished and health-care workers) as the best and most effective strategy for reducing influenza-related morbidity and mortality. Immunization with available inactivated virus vaccines can provide 70–90% protection against infection in healthy young adults.</p> <p>A single dose suffices for those with prior exposure to influenza A and B; two doses 1 month apart are required for persons who have no previous immunization history i.e. children under 10 years of age or an immunologically-naive population.</p> <p>See:</p> <p>Influenza vaccines: WHO position paper at http://www.who.int/docstore/wer/pdf/2002/wer7728.pdf (<i>under revision</i>).</p> <p>WHO guidelines on the Use of Vaccines and Antivirals during influenza Pandemics. WHO/CDS/CSR/RMD/2004.8, available at http://www.who.int/csr/resources/publications/influenza/WHO_CDS_CSR_RMD_2004_8/en/</p>
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10. LEPROSY

DESCRIPTION

Infectious agent	Bacterium: <i>Mycobacterium leprae</i> .
Case definition	<p>WHO operational definition:</p> <p>A case of leprosy is defined as a person showing hypopigmented or reddish skin lesion(s) with definite loss of sensation.</p> <p>The operational case definition includes:</p> <ul style="list-style-type: none"> retrieved defaulters with signs of active disease; relapsed cases that have previously completed a full course of treatment. <p>Case classification (clinical):</p> <p><u>Paucibacillary leprosy (PB):</u> 1–5 patches or lesions on the skin.</p> <p><u>Multibacillary leprosy (MB):</u> more than 5 patches or lesions on the skin.</p> <p>Laboratory criteria for confirmation</p> <p>In practice, laboratories are not essential for the diagnosis of leprosy.</p>
Mode of transmission	Not clearly established: probably organisms enter the human body through the mucous membranes of the upper respiratory tract and possibly through broken skin, during close and frequent contact with untreated, infected persons.
Incubation	9 months–40 years; on average 5–7 years.
Period of communicability	<p>If not treated: infectivity is possible, the risk being higher for contacts of multibacillary cases than of paucibacillary cases.</p> <p>Treated: infectivity vanishes after a few doses of treatment with multidrug therapy (MDT).</p>

EPIDEMIOLOGY

Burden	<p>Angola is one of the highest prevalence endemic countries in the WHO African Region, with more than 3.5 cases per 10 000 population.</p> <p style="text-align: center;">Leprosy cases reported nationally, 2004</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;">Indicators</th> <th style="text-align: right;">Number of cases</th> </tr> </thead> <tbody> <tr> <td>Registered cases</td> <td style="text-align: right;">3 776</td> </tr> <tr> <td>New cases</td> <td style="text-align: right;">2 933</td> </tr> <tr> <td>Prevalence rate per 10 000</td> <td style="text-align: right;">2.84</td> </tr> <tr> <td>Detection rate</td> <td style="text-align: right;">22.07</td> </tr> <tr> <td>New MB</td> <td style="text-align: right;">2 008</td> </tr> <tr> <td>New child</td> <td style="text-align: right;">318</td> </tr> <tr> <td>Number discharged</td> <td style="text-align: right;">341</td> </tr> <tr> <td>Relapses</td> <td style="text-align: right;">0</td> </tr> </tbody> </table> <p>(Data source: WHO/AFRO report: African Region Leprosy Elimination programme National Manager's meeting, 29 June–1 July 2004).</p>	Indicators	Number of cases	Registered cases	3 776	New cases	2 933	Prevalence rate per 10 000	2.84	Detection rate	22.07	New MB	2 008	New child	318	Number discharged	341	Relapses	0
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Leprosy cases reported nationally, 2003		
Indicators	Number of cases	Rates/proportions
Prevalence	5 249	3.64/10 000
Detection	4 272	29.63/100 000
New MB	2, 975	56.67%
New child	485	11.35%
New with deformity	565	10.71%
Relapses registered in 2002	0	
Geographical coverage		90%

(Data source: WHO/AFRO report - *Leprosy in the WHO African Region, Trend and Situation 2003*).

Geographical distribution	There is a predominance of MB cases in relation to PB. The provinces with the highest prevalences per 10 000 population are Mulange (4.5), Lunda Norte and Lunda Sul (6.5), Cabinda (4.4) and Zaire (4.2). Other traditional geographical foci of the disease include Huambo, Bie and Huila provinces.
Seasonality	No seasonality registered.
Recent epidemics in the country	The disease has no epidemic potential.

RISK FACTORS FOR INCREASED BURDEN

Population movement	No	
Overcrowding	No	
Poor access to health services	Yes	Prompt identification and treatment of the cases is an important control measure. Lack of early diagnosis and treatment due to difficulties in diagnostic methodology and accessing health services (geographical, financial, security) increases the burden of disease and risk of transmission.
Food shortages	No	
Lack of safe water and poor sanitation	Yes	Providing safe water is a means of secondary prevention of complications since it is essential for some of the hygienic measures recommended for the affected body parts.
Others	Yes	Access is restricted in many areas due to security reasons (land mines).
Risk assessment conclusions		<p>Leprosy is considered a public health problem when the prevalence surpasses 1 per 10 000 population. Angola therefore still remains one of the highest burden countries in the WHO African Region. The most remarkable achievement in Angola is the increased national coverage of the programme from less than 25% in 1999 to 90% in 2003. However, the population has little awareness of the disease – a fact that contributes to the maintenance of stigma linked with leprosy.</p> <p>The elimination of leprosy in complex emergency humanitarian settings such as in Angola involves implementing MDT in selected accessible areas, increasing community awareness and mobilization, active involvement of NGOs, active case-finding and improved case management.</p>

PREVENTION AND CONTROL MEASURES

<p>Case management</p>	<p>Treatment by MDT according to case classification:</p> <ul style="list-style-type: none"> • <u>Multibacillary leprosy</u>: the standard regimen is a combination of the following drugs for 12 months: <p>Adults:</p> <ul style="list-style-type: none"> • rifampicin: 600 mg once a month • dapsone: 100 mg once a day • clofazimine: 50 mg once a day and 300 mg once a month. <p>Children must receive appropriately scaled-down doses (in child blister-packs).</p> <ul style="list-style-type: none"> • <u>Paucibacillary leprosy</u>: the standard regimen is a combination of the following drugs for 6 months: <p>Adults:</p> <ul style="list-style-type: none"> • rifampicin: 600 mg once a month • dapsone: 100 mg once a day <p>Children must receive appropriately scaled-down doses (in child blister-packs).</p> <p>A core element of the elimination strategy is to make diagnosis and MDT available at all health centres, to all existing leprosy patients. MDT is provided free of charge by WHO. Any interruption of treatment schedules is serious.</p>
<p>Prevention</p>	<p>Early detection and treatment of cases. Reducing contact with known leprosy patients is of dubious value and can lead to stigmatization.</p>
<p>Immunization</p>	<p>BCG vaccination can induce limited protection against the tuberculoid form of the disease; this is part of the control methods against tuberculosis, and therefore is not necessary to undertake specifically against leprosy.</p>

11. LYMPHATIC FILARIASIS

DESCRIPTION

Infectious agent	Helminth: <i>Wuchereria bancrofti</i> , a filarial worm belonging to the class <i>Nematoda</i> . Other genera are not known to be present in Angola.
Case definition	<p><u>Clinical case definition</u></p> <p>Hydrocele or lymphoedema in a resident of an endemic area for which other causes of these findings have been excluded.</p> <p><u>Laboratory criteria</u></p> <p>Positive parasite identification by:</p> <ul style="list-style-type: none"> – direct blood examination or – ultrasound or – positive antigen detection test <p><u>Case classification</u></p> <p>Suspected: not applicable. Probable: a case that meets the clinical case definition. Confirmed: a person with positive laboratory criteria even if he/she does not meet the clinical case definition.</p> <p>The burden of lymphatic filariasis, as measured in disability-adjusted life years (DALYs), is the highest of all tropical diseases after malaria.</p>
Mode of transmission	Bite of infected blood-feeding female mosquitoes (mainly <i>Anopheles</i> spp., also <i>Culex</i> spp.), which transmit immature larval forms of the parasitic worms from human to human.
Incubation	<p><u>1 month to 1 year and more:</u> recidivate attacks of “filarial fever” (pain and inflammation of lymph nodes and ducts, often accompanied by fever, nausea and vomiting);</p> <p><u>5 to 20 years:</u> chronic illness manifestations may include elephantiasis (swelling of limbs), hydrocele (swelling of the scrotum in males), enlarged breasts in females and chyluria.</p>
Period of communicability	As long as microfilariae are present in the peripheral blood (from 6–12 months to 5–10 years after the infective bite).

EPIDEMIOLOGY

Burden	Angola is among the 83 countries endemic for lymphatic filariasis. Population at risk (1999): In the absence of mapping of endemic areas, the entire population of 11 million (est.) is considered at risk. More accurate data will be available after the initial assessment and mapping is completed by the end of 2006.
Geographical distribution	Lymphatic filariasis is endemic in the northern part of the country, especially in the Congo/Zaire River Valley. Its known or suspected southern limit runs along the southern boundaries of the Provinces of Cuanza Sul, Bié, and Moxico. Lymphatic filariasis is distributed in contiguous zones. However prevalence rates vary greatly from one geographical area to another, and even between one village and another within the same district.
Seasonality	Even if data on the seasonality of vectoral density are not available, the rainy season is likely to be associated with a higher risk of transmission (south of the equator: November–March). The frequency of acute adenolymphangitis (ADL) attacks also increase during the wet season.

Recent epidemics in the country	The disease is not outbreak-prone.
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RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Disease-free population can be displaced into endemic areas.
Overcrowding	Yes	Living in crowded conditions increases the risk of transmission.
Poor access to health services	Yes	Lack of early diagnosis and treatment due to difficulties in diagnostic methodology and accessing health services (geographical, financial, security) increases the risk of transmission. Mass chemotherapy with two safe drugs given once a year to the entire population at risk is a more feasible approach to reduce transmission. This can be implemented by community volunteers.
Food shortages	No	
Lack of safe water and poor sanitation	Yes	Providing safe water is a means of secondary prevention of complications (prevention of the ADL attacks secondary to lymphoedema), but not of the infection. It is essential for some of the hygienic measures recommended for the affected body parts. Poor sanitation may contribute to creating breeding sites for mosquito vectors (especially <i>Culex</i> spp.).
Others	Yes	Economic and Social impact There is an established link between the prevalence of lymphatic filariasis, reduced productivity and poverty. Lymphatic filariasis exerts a heavy social burden that is especially severe because of the specific attributes of the disease, particularly since chronic complications are often hidden and considered shameful. For men, genital damage is a severe handicap leading to physical limitations and social stigmatization. For women, shame and taboos are also associated with the disease.
Risk assessment conclusions		The complex emergency situation of Angola has prevented its joining the Global Programme to Eliminate Lymphatic Filariasis (GPELF), and has not only allowed the disease to progress uncontrolled but also poses a risk for transmission to neighbouring countries, thereby hampering their elimination efforts. Initial assessment and mapping of lymphatic filariasis needs to be completed by the end of 2006 in order to localize populations at risk. After that it will be possible to implement the elimination programme, to monitor drug coverage over time and to monitor the impact of mass drug administration (MDA) on transmission in space and time. The introduction of a Programme to Eliminate Lymphatic Filariasis (PELF) in the country would bring "beyond filariasis" benefits, since albendazole is also an effective and safe drug for treating soil-transmitted helminths; ivermectin is effective against many intestinal parasites, scabies and lice.

PREVENTION AND CONTROL MEASURES

Case management	<ul style="list-style-type: none"> • Hygiene measures for the affected body parts (and, when necessary, antibiotics and antifungal agents) can decrease the risk of ADL: <ul style="list-style-type: none"> – Wash the affected parts twice daily with soap and clean water – Raise the affected limb at night – Exercise to promote lymph flow – Keep nails shorts and clean – Wear comfortable footwear – Use antiseptic, antibiotic, or antifungal creams to treat small wounds or abrasions; in severe cases, systemic antibiotics may be necessary. • Drug regimen for individual microfilarial-positive patients: <ul style="list-style-type: none"> – Diethyl carbamazine citrate (DEC) 6 mg/kg single dose for 12 days, repeated at 1–6 month intervals if necessary. However, a single 6 mg/kg dose is equally effective in killing the adult worm and in reducing the number of microfilaria. Since the use of DEC in patients with either onchocerciasis or loiasis can be unsafe, it is important that patients with Bancroftian filariasis who live in areas endemic for these other infections be examined for coinfection with these parasites before being treated with DEC. – Alternatively, ivermectin and albendazole can be used. Ivermectin, although very effective in decreasing microfilaraemia, appears not to kill adult worms (i.e. it is not macrofilaricidal) and thus does not cure infection completely. – Albendazole can be macrofilaricidal for <i>W. bancrofti</i>, but optimization of its usage has not been attempted and it is not recommended to be given alone.
Prevention and control	<p>Prevention of infection can only be achieved either by decreasing contact between humans and vectors or by decreasing the amount of infection the vector can acquire, by treating the human host.</p> <p><u>A. POPULATION LEVEL</u></p> <p>Even when good mosquito control can be put into place, the long lifespan of the parasite (4–8 years) means that the infection remains in the community for a long period of time, generally longer than the period for which intensive vector control efforts can be sustained.</p> <p>The recent advent of the extremely effective single-dose, once-yearly drug regimen has permitted an alternative approach and the launch of GPELF in 2000.</p> <p>When Angola is ready to join the GPELF, the following steps will need to be taken:</p> <ul style="list-style-type: none"> – The national territory is divided in areas called implementation units (IUs). – In IUs known to be endemic, where the prevalence is >1%, MDA will be implemented if the prevalence by antigenaemia in IU is greater than 1%. – In each IU where lymphatic filariasis status is uncertain, a village will be selected that has greatest risk of transmission (or will be randomly selected if no information is available). – In the selected villages, a sample of 250 persons aged 15 years and older should be examined using the immunochromatographic card test. If any person has a positive result, the IU should be classified as endemic. – For each village the number of persons examined and the number of persons positive is required for the calculation of prevalence. – MDA will be implemented if the prevalence in the IU is >1%. <p>GPELF has two main goals:</p> <ul style="list-style-type: none"> – to interrupt transmission of infection; and – to prevent disability caused by the disease.

	<p><u>To interrupt transmission of infection</u></p> <p>The entire at-risk population must be treated for a period long enough to ensure that levels of microfilariae in the blood remain below those necessary to sustain transmission. Therefore, a <i>yearly, 1-dose</i> MDA of the following drugs must be given:</p> <p><i>As Angola has areas with concurrent onchocerciasis the recommended drugs are:</i></p> <ul style="list-style-type: none"> – albendazole 400 mg + ivermectin 150 µg/kg body weight, once a year for 4–6 years. <p><i>Areas with concurrent loiasis:</i></p> <ul style="list-style-type: none"> – Mass interventions cannot be envisaged systematically because of the risk of severe adverse reactions in patients with high-density loa loa infections (about 1 in 10 000 treatments). Presently, MDA with ivermectin cannot be implemented in loa loa coendemic areas. <p><u>To alleviate and prevent suffering and disability</u></p> <p><i>Increase lymph flow</i> through elevation and exercise of the swollen limb. <i>Decrease secondary bacterial and fungal infections</i> of limbs or genitals where the lymphatic function has already been compromised by filarial infection. Secondary infection is the primary determinant of the worsening of lymphoedema and elephantiasis.</p> <p>Scrupulous hygiene and local care are dramatically effective in preventing painful, debilitating and damaging episodes of lymphangiitis. These consist of regular washing with soap and clean water, daily exercising of the limbs, wearing of comfortable footwear and carrying out other simple, low-cost procedures at home (see <i>Case management</i> below for details).</p> <p>Whereas MDA can generally be expected to reduce or interrupt transmission of lymphatic filariasis, the goal of GPELF could be achieved more rapidly through additional vector control in some situations. The large-scale use of insecticide-treated bednets already encouraged for malaria control will also have a benefit in reducing transmission of lymphatic filariasis.</p> <p><u>B. INDIVIDUAL LEVEL</u></p> <p>Lymphatic filariasis vectors usually bite between the hours of dusk and dawn. Contacts with infected mosquitoes can be decreased through the use of repellents, bednets, or insecticide-impregnated materials.</p>
<p>Epidemic control</p>	<p>Because of relatively low infectivity and long incubation, outbreaks of lymphatic filariasis are unlikely.</p>

12. MALARIA

DESCRIPTION

Infectious agent	In Angola, over 90% of all malaria cases are caused by the protozoan parasite <i>Plasmodium falciparum</i> , which causes the most life-threatening form of the disease. <i>P. malariae</i> and <i>P. ovale</i> in isolation or mixed with <i>P. falciparum</i> are responsible for the remaining malaria burden.
Case definition	<p>Uncomplicated malaria Patient with fever or history of fever within the past 48 hours (with or without other symptoms such as nausea, vomiting and diarrhoea, headache, back pain, chills, muscle pains and fatigue).</p> <p>Severe malaria Patient with symptoms as for uncomplicated malaria, plus drowsiness with extreme weakness and associated signs and symptoms related to organ failure (e.g. disorientation, loss of consciousness, convulsions, severe anaemia, jaundice, haemoglobinuria, spontaneous bleeding, pulmonary oedema and shock).</p> <p>Confirmed case (uncomplicated or severe) Patient with uncomplicated or severe malaria <u>with laboratory confirmation of diagnosis</u> by malaria blood film or other diagnostic test for malaria parasites.</p> <p>In Angola, children under 5 years of age with fever and no general danger sign or stiff neck should be classified as having malaria. Although a substantial number of children will be treated for malaria when in fact they have another febrile illness, presumptive treatment for malaria is justified in this category given their high malaria risk and the possibility that another illness may lead to progression of the malaria infection. Illness in a child may commonly have more than one pathological basis and fever does not necessarily equate with malaria, even in high-transmission areas.</p>
Mode of transmission	<p>Vector-borne, through bite of <i>Anopheles</i> mosquitoes, which bite mainly between dusk and dawn. The main vectors of malaria in the country are <i>An.gambiae</i>, <i>An.melas</i>, <i>An.funestus</i> and <i>An.arabiensis</i>.</p> <p>Malaria may also be transmitted through transfusion by injection of infected blood. Rarely, infants may contract malaria in utero (through transplacental transfer of parasites) or during delivery.</p> <p>Transmission is related to the presence of infective <i>Anopheles</i> mosquitoes, and of infective gametocytes in the blood of patients. Untreated or insufficiently treated patients may be a source of mosquito infection for more than 3 years in <i>P. malariae</i> malaria, but usually not more than 1 year in <i>P. falciparum</i> malaria.</p>
Incubation	<p>Average incubation period for mosquito-transmitted <i>P. falciparum</i> is 12 days (7–14 days), and somewhat longer for <i>P. ovale</i> and <i>P. malariae</i> infections.</p> <p>Malaria should be considered in all cases of unexplained fever that starts at any time between 1 week after the first possible exposure to malaria risk and 2 months (or even later in rare cases) after the last possible exposure.</p>

<p>Period of transmission</p>	<p>Malaria risk exists all year round throughout the whole country.</p> <p>Endemicity varies with altitude, rainfall, humidity, temperature and vegetation.</p> <p>Three strata have been identified:</p> <ul style="list-style-type: none"> • Forest and savannah: hyperendemic – in the north and north east of the country. The principle vectors in this stratum are <i>An.funestus</i> and <i>An.gambiae</i>. • Savannah: mesoendemic stable – central part of the country. The principle vectors in this stratum are <i>An.gambiae</i> and <i>An.arabiensis</i>. • Savannah and steppe – mesoendemic unstable – south and south west of the country. The principle vectors in this stratum are <i>An.arabiensis</i> and <i>An.melas</i>. <p style="text-align: center;">Breeding, biting and resting habits of main malaria vectors in Angola</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Vector</th> <th style="text-align: left;">Breeding and biting habits</th> <th style="text-align: left;">Resting habits</th> </tr> </thead> <tbody> <tr> <td><i>An. funestus</i></td> <td>Breeds in more or less permanent water bodies, especially those with vegetation, such as swamps, edges of streams. Predominantly feeds on humans, both indoors and outdoors. Also feeds on domestic animals.</td> <td>Rests mainly indoors after feeding</td> </tr> <tr> <td><i>An. gambiae</i></td> <td>Extremely efficient malaria vector. Breeds in temporary water collections such as pools, puddles, rice fields. Bites humans both indoors and outdoors; in some areas it also feeds on domestic animals.</td> <td>Rests mostly indoors after feeding; may rest outdoors</td> </tr> <tr> <td><i>An. melas</i></td> <td>Salt-water breeding malaria vector of coastal areas. Bites humans both indoors and outdoors; in some areas it also feeds on domestic animals.</td> <td>Rests mostly indoors after feeding; may rest outdoors</td> </tr> <tr> <td><i>An. arabiensis</i></td> <td>Breeds in temporary water collections such as pools, puddles, rice fields. Bites humans and animals, indoors and outdoors.</td> <td>Rests indoors or outdoors after feeding</td> </tr> </tbody> </table> <p>Source: Malaria Control in Complex Emergencies, an Interagency Field Handbook, WHO/HTM/MAL/2005.1107, WHO 2005 (in press).</p>	Vector	Breeding and biting habits	Resting habits	<i>An. funestus</i>	Breeds in more or less permanent water bodies, especially those with vegetation, such as swamps, edges of streams. Predominantly feeds on humans, both indoors and outdoors. Also feeds on domestic animals.	Rests mainly indoors after feeding	<i>An. gambiae</i>	Extremely efficient malaria vector. Breeds in temporary water collections such as pools, puddles, rice fields. Bites humans both indoors and outdoors; in some areas it also feeds on domestic animals.	Rests mostly indoors after feeding; may rest outdoors	<i>An. melas</i>	Salt-water breeding malaria vector of coastal areas. Bites humans both indoors and outdoors; in some areas it also feeds on domestic animals.	Rests mostly indoors after feeding; may rest outdoors	<i>An. arabiensis</i>	Breeds in temporary water collections such as pools, puddles, rice fields. Bites humans and animals, indoors and outdoors.	Rests indoors or outdoors after feeding
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EPIDEMIOLOGY

Burden	<p>Malaria is the leading cause of morbidity and mortality in Angola. It has been estimated to account for 50% of outpatient department (OPD) attendance and 20% of hospital admissions.</p> <p>In 2002, proportional malaria mortality rates for children less than 5 years old and pregnant women were 35% and 15%, respectively, as recorded among inpatients. (source: Angola GFATM proposal, http://www.theglobalfund.org/search/docs/3AGOM_590_0_full.pdf).</p> <p style="text-align: center;">Malaria burden in Angola</p> <hr/> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Estimated population at risk (1998)</td> <td style="text-align: right;">11 967 000</td> </tr> <tr> <td>Estimated population under 5 years of age at risk (1998)</td> <td style="text-align: right;">2 297 000</td> </tr> <tr> <td>Estimated pregnant women at risk (1998)</td> <td style="text-align: right;">568 000</td> </tr> <tr> <td> </td> <td></td> </tr> <tr> <td>Reported malaria cases (2002)*</td> <td style="text-align: right;">1 409 328</td> </tr> <tr> <td>Reported malaria cases in children under 5 years of age (2002)*</td> <td style="text-align: right;">484 754</td> </tr> <tr> <td>Reported deaths attributed to malaria (2002)*</td> <td style="text-align: right;">11 344</td> </tr> <tr> <td> </td> <td></td> </tr> <tr> <td>Estimated malaria deaths per annum</td> <td style="text-align: right;">32 500–49 200</td> </tr> <tr> <td>Estimated malaria incidence per 1000 population at risk per year</td> <td style="text-align: right;">297</td> </tr> <tr> <td>Estimated malaria prevalence (2–9-year olds)</td> <td style="text-align: right;">20–60%</td> </tr> <tr> <td>Estimated direct and indirect cost of malaria per annum (1995) (with 64% of this cost borne at household level)</td> <td style="text-align: right;">US\$ 125 million</td> </tr> </table> <hr/> <p>Data sources: WHO/AFRO – Southern Africa Malaria Control Programme, 2005. * http://www.who.int/globalatlas</p> <hr/> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="text-align: center;">1997</th> <th style="text-align: center;">1998</th> <th style="text-align: center;">1999</th> <th style="text-align: center;">2000</th> <th style="text-align: center;">2001</th> <th style="text-align: center;">2002</th> </tr> </thead> <tbody> <tr> <td>Reported malaria deaths</td> <td style="text-align: center;">NA</td> <td style="text-align: center;">NA</td> <td style="text-align: center;">25 572</td> <td style="text-align: center;">13 376</td> <td style="text-align: center;">9 255</td> <td style="text-align: center;">11 344</td> </tr> <tr> <td>Reported malaria cases</td> <td style="text-align: center;">893 232</td> <td style="text-align: center;">1 169 028</td> <td style="text-align: center;">1 471 993</td> <td style="text-align: center;">1 635 884</td> <td style="text-align: center;">1 385 597</td> <td style="text-align: center;">1 409 328</td> </tr> <tr> <td>Reported cases per 1000 population</td> <td style="text-align: center;">78</td> <td style="text-align: center;">100</td> <td style="text-align: center;">122</td> <td style="text-align: center;">132</td> <td style="text-align: center;">109</td> <td style="text-align: center;">107</td> </tr> </tbody> </table> <hr/> <p>NA, not available Data source: World Malaria Report 2005.</p>	Estimated population at risk (1998)	11 967 000	Estimated population under 5 years of age at risk (1998)	2 297 000	Estimated pregnant women at risk (1998)	568 000	 		Reported malaria cases (2002)*	1 409 328	Reported malaria cases in children under 5 years of age (2002)*	484 754	Reported deaths attributed to malaria (2002)*	11 344	 		Estimated malaria deaths per annum	32 500–49 200	Estimated malaria incidence per 1000 population at risk per year	297	Estimated malaria prevalence (2–9-year olds)	20–60%	Estimated direct and indirect cost of malaria per annum (1995) (with 64% of this cost borne at household level)	US\$ 125 million		1997	1998	1999	2000	2001	2002	Reported malaria deaths	NA	NA	25 572	13 376	9 255	11 344	Reported malaria cases	893 232	1 169 028	1 471 993	1 635 884	1 385 597	1 409 328	Reported cases per 1000 population	78	100	122	132	109	107
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Geographical distribution	Malaria transmission occurs all year round throughout the country. The entire population is at risk of malaria.
Seasonality	In most areas of the country, transmission peaks during and just after the rainy season. The peak transmission period in Angola occurs in December–June.
Alert threshold	Any increase in the number of cases above what is expected for that time of the year in a defined area.
Recent epidemics	No recent epidemics have been recorded. The southern provinces Cunene, Huíla, Kuando-Kubango and Namibe are epidemic-prone. Some high altitude areas of the central plateau may also have unstable malaria transmission and be prone to climate-dependent epidemics.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	The potential for epidemics can increase because of the influx of less-immune populations moving from areas of no or low malaria transmission to highly endemic areas. The movement of populations from, into and within Angola is likely to affect the malaria situation. Refugees, returnees and displaced people have moved between regions of a range of endemicities. Although malaria transmission occurs throughout the year in most of the country, not all of the population will have protective levels of acquired immunity.
Overcrowding	Yes	As a result of increased population density and increased exposure to mosquito bites in temporary shelters.
Poor access to health services	Yes	Delay in access to effective treatment increases the likelihood of severe disease and death. It also increases the pool of malaria gametocyte carriers (the mature sexual stage of the parasite in humans that, once picked up in the blood meal of a mosquito, develops into the infective stage for transmission to another human).
Food shortages	No	However, malnutrition increases vulnerability to severe malaria once infection has occurred. Severe malnutrition often masks symptoms and signs of infectious diseases making prompt clinical diagnosis and early treatment very difficult. Case management also becomes more complicated, resulting in increased mortality.

Lack of safe water and poor sanitation	No	However, temporary stagnant water bodies may increase malaria vector breeding opportunities.
Others	Yes	<p>Malaria is endemic in most or all of Angola. In parts of the country, small pockets of high altitude may exist where temperatures are normally lower than necessary for the transmission of malaria. There is a potential for temperature increases in these areas, thereby increasing malaria transmission.</p> <p>In urban and periurban areas the environmental risk for malaria is amplified by a growing number and diversity of mosquito breeding sites which are made of stagnant water resulting from broken pipes, uncollected garbage and inadequate drainage systems.</p> <p>Given the prolonged civil strife and war in the country, there has been a breakdown in malaria control measures and poor access to antimalarial drugs in most public health facilities. Coverage of preventive interventions such as insecticide-treated mosquito nets, residual insecticide spraying of shelters, and environmental management (e.g. drainage of water canals in inhabited areas) is low.</p> <p>In 2003, a total of 364 940 mosquito nets were (re)treated. Four thousand households were protected with indoor residual spraying (IRS) in 2002. According to MICS 2001 data, 10.2% of children less than 5 years of age slept under a mosquito net the night preceding the survey; this includes treated and untreated nets.</p> <p>Data source: <i>World Malaria Report 2005</i>.</p>
Risk assessment conclusions		<p>The majority of malaria cases in Angola are due to <i>P. falciparum</i>, which can cause severe disease and death. Pregnant women and children and non-immune internally displaced persons (IDPs) moving to endemic areas are considered high-risk groups. Many people among IDP populations are highly susceptible to malaria.</p> <p>Malaria is recognized as a major health issue by the people, but only a few recognize the causal link between the mosquito and malaria.</p> <p>Resistance to antimalarial drugs</p> <p><i>P. falciparum</i> treatment failures with chloroquine were 41.8% (median, 6 studies) in 2002. In 2002–2003, treatment failures were 5.7% for sulfadoxine–pyrimethamine (median, 8 studies) and 8.7% for amodiaquine (median, 2 studies).</p> <p>Insecticide resistance</p> <p>No insecticide resistance has been reported.</p>

PREVENTION AND CONTROL MEASURES

Case management	<p>Treatment policies for falciparum malaria in all countries experiencing drug resistance should be combination therapies, preferably containing an artemisinin derivative (ACT - artemisinin-based combination therapy). Effective pharmacovigilance systems should be established concurrently to pick up any possible rare adverse effects, especially among pregnant women.</p> <p>The following therapeutic options have been adopted for implementation in Angola (Policy adopted April 2005, details at http://www.who.int/malaria/amdp/amdp_afro.htm)</p> <p><u>Uncomplicated malaria (clinically diagnosed & laboratory confirmed cases):</u></p> <p style="padding-left: 40px;">Artemether–lumefantrine (oral 2 times daily for 3 days)</p> <p><u>Treatment failure</u></p> <p style="padding-left: 40px;">Quinine (oral, 10 mg/kg, 3 times daily for 7 days)</p> <p><u>Severe malaria</u></p> <p style="padding-left: 40px;">Quinine (IV, 10 mg/kg, 3 times daily for 7 days)</p> <p>Each intravenous quinine infusion must be administered over a period of 4 hours. The first dose of quinine should be given intravenously by slow infusion in isotonic fluid or 5% dextrose saline over 4 h. The first or loading dose is a double dose (20 mg/kg) and allows optimal drug levels in the bloodstream within a few hours. Subsequent doses are 10 mg/kg. If intravenous infusion is not possible, quinine may be given by intramuscular injection, in which case the drug should be diluted to a concentration of 60 mg/ml and divided into two and half the dose delivered into each anterior thigh. Whenever parenteral quinine is used, oral treatment should be resumed as soon as the patient is able to take it, and continued for the completion of the 7-day course.</p> <p><u>Pregnancy</u></p> <p>For uncomplicated <i>P. falciparum</i> malaria in pregnant women</p> <p style="padding-left: 40px;">Quinine (oral, 3 times daily for 7 days)</p> <p style="padding-left: 40px;">(Alternative option for 14th–27th week: sulfadoxine–pyrimethamine)</p> <p>With effective pharmacovigilance systems, artemether–lumefantrine can be used in the 2nd and 3rd trimesters of pregnancy.</p> <p>For severe <i>P. falciparum</i> malaria in pregnancy use IV quinine as above.</p> <p><u>Laboratory capacity</u></p> <p>Laboratory diagnostic (microscopy) services are available at regional and district hospitals, other district health facilities and private laboratories.</p> <p>Malaria diagnosis is done by rapid diagnostic tests (RDTs) in some clinics. RDTs that detect histidine-rich protein-II (HRP-II) may continue to produce positive test results for up to 14 days after effective treatment of a malaria infection, even when patients no longer have detectable parasites on microscopy, and thus RDTs should not be used to assess parasite clearance or for re-screening treated patients.</p> <p>RDTs may lose their sensitivity when stored in hot and humid conditions. It is recommended to request heat-stability data from the manufacturer before purchase. For more information on RDTs, visit http://www.who.int/malaria/rdt.html</p>
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<p>Prevention and control</p>	<p>To respond to the challenge of malaria, the National Malaria Control Programme (NMCP) has adopted several key strategies for malaria control including:</p> <ol style="list-style-type: none"> I. Capacity building of the NMCP in management and coordination II. Case management III. Vector control IV. Epidemic preparedness and response in focal areas (particularly in southern provinces) V. Information, education and communication materials for malaria control and community mobilization VI. Community-based malaria control VII. Operational research VIII. Strengthening of monitoring and evaluation. <p>A five year strategic plan (2005–2009) has been drafted and a National Malaria Task Force is in place.</p> <p>Presently, malaria control rests primarily on treatment of cases at health centres, hospitals, traditional medical practitioners, private pharmacies, mobile traders and home-based care. The current NMCP gives priority to early detection and treatment.</p> <p>Intermittent preventive treatment (IPT) with sulfadoxine–pyrimethamine at least twice during pregnancy (during 2nd and 3rd trimesters) is recommended for pregnant women living in areas where transmission is high.</p> <p>Insecticide-treated bednets (ITNs) have proven efficacy in reducing morbidity and mortality. They also have the potential for reducing transmission when used on a large scale (above 50-60% population coverage). National policy promotes the use of ITNs, although individual use is rare and usually motivated only by the nuisance of mosquito-biting at night. The NMCP is developing a community-based approach in Luanda and Bengo provinces with a focus on ITN distribution.</p> <p>Periodic indoor spraying of shelters with residual insecticide reduces transmission and is recommended in temporary settlements/camps, particularly among populations occupying mud huts or houses. When large numbers of dwellings are sprayed (> 85% coverage), a mass effect on the vector density can result.</p> <p>Environmental control may be difficult during the acute phase except on a local scale, and impact is often limited. To reduce the number of vector breeding sites:</p> <ul style="list-style-type: none"> • drain clean water around water tap stands and rain water drains; • use larvicides in vector breeding sites if these are limited in number (seek expert advice); • drain ponds (although this may not be acceptable if ponds are used for washing and/or for animals). <p>Vigorous health education at community level is important to improve rapid treatment-seeking behaviour for fever cases and for correct ITN use.</p> <p>For international travelers it is important to use chemoprophylaxis, prevent mosquito bites between dusk and dawn, and immediately seek diagnosis and treatment for any fever occurring a week or more after entering the country. The recommended chemoprophylaxis options for Angola are, in alphabetical order: atovaquone/proguanil, doxycycline, and mefloquine. More information for international travellers is available on http://www.who.int/ith. Population-wide use of malaria chemoprophylaxis is not recommended because implementation and monitoring on a large scale are extremely difficult, and because it can accelerate the development of drug resistance.</p>
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13. MEASLES

DESCRIPTION

Infectious agent	Measles virus (genus <i>Morbillivirus</i> , family Paramyxoviridae)
Case definition	<p><u>Clinical case definition</u> Any person with:</p> <ul style="list-style-type: none"> – fever and – maculopapular (i.e. non vesicular) rash, and – cough or coryza (i.e. runny nose) or conjunctivitis (i.e. red eyes); or <p>Any person in whom a clinical health worker suspects measles infection.</p> <p><u>Laboratory criteria</u> Presence of measles-specific IgM antibodies.</p> <p><u>Case classification</u> Clinically-confirmed: a case that meets the clinical case definition Laboratory confirmed: (only for outbreak confirmation and during the outbreak prevention/elimination phase):</p> <ul style="list-style-type: none"> – a case that meets the clinical case definition and is laboratory confirmed; or – a case meeting the clinical case definition and epidemiologically-linked by direct contact to a laboratory-confirmed case in which rash onset occurred 7–18 days earlier.
Mode of transmission	Airborne by droplet spread; or Direct contact with the nasal and throat secretions of infected persons or via an object (e.g. toys) that has been in close contact with an infected person.
Incubation	After infection there is an asymptomatic incubation period of 10–12 days, with a range from 7 to 18 days from exposure to the onset of fever.
Period of communicability	Measles is most infectious from 4 days before the rash until 1–2 days after rash onset.

EPIDEMIOLOGY

Burden	A high number of cases continues to be reported in the country.			
	Number of measles cases reported nationally			
	Year	Number of cases	Year	Number of cases
	2004	29	1993	9 273
	2003	1 196	1992	16 772
	2002	11 945	1991	18 382
	2001	9 046	1990	29 069
	2000	2 219	1989	19 820
	1999	350	1988	21 009
	1998	2 576	1987	13 368
	1997	8 183	1985	22 685
	1996	251	1980	29 656
	1995	635		
	1994	5 480		
	(Data provided by MOH through WHO-UNICEF Joint Reporting Form and WHO Regional Offices)			

Geographical distribution	Measles is still widely distributed and reported from various parts of the country.
Seasonality	The highest incidence of cases is usually observed between the end of the dry season and the beginning of the rainy season (north of the equator: February–March; south of the equator: October–November).
Alert threshold	One case must lead to an alert. Laboratory confirmation of all cases is not required; only a few cases from each outbreak need to be laboratory confirmed.
Recent epidemics	No details available.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Importation of virus. Influx of non-immune populations into areas where pathogen is circulating or of infected individuals into areas where population is not immunized.																																				
Overcrowding	Yes	Crowded conditions facilitate rapid transmission.																																				
Poor access to health services	Yes	Case fatality rates can be reduced by effective case management, including the administration of vitamin A supplements.																																				
Food shortages	No	However, disease is more severe among children with malnutrition and vitamin A deficiency.																																				
Lack of safe water and poor sanitation	No																																					
Others	Yes	<p>Low immunization coverage in the area of origin of the displaced population, and/or the host area.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="4">National routine measles vaccine coverage reported</th> </tr> <tr> <th>Year</th> <th>Coverage (%)</th> <th>Year</th> <th>Coverage (%)</th> </tr> </thead> <tbody> <tr> <td>2004</td> <td>64</td> <td>1997</td> <td>78</td> </tr> <tr> <td>2003</td> <td>62</td> <td>1996</td> <td>62</td> </tr> <tr> <td>2002</td> <td>74</td> <td>1995</td> <td>46</td> </tr> <tr> <td>2001</td> <td>72</td> <td>1994</td> <td>44</td> </tr> <tr> <td>2000</td> <td>41</td> <td>1990</td> <td>38</td> </tr> <tr> <td>1999</td> <td>46</td> <td>1980</td> <td>No data available</td> </tr> <tr> <td>1998</td> <td>65</td> <td></td> <td></td> </tr> </tbody> </table> <p>(Data source: WHO/UNICEF estimates, 2004).</p>	National routine measles vaccine coverage reported				Year	Coverage (%)	Year	Coverage (%)	2004	64	1997	78	2003	62	1996	62	2002	74	1995	46	2001	72	1994	44	2000	41	1990	38	1999	46	1980	No data available	1998	65		
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Risk assessment conclusions		<p>Angola is among the countries whose routine measles vaccination coverage has been below WHO recommended standards for the past 20 years. The population is at high risk of measles outbreaks given this coverage and presence of above-mentioned risk factors. Measles supplemental immunization activities have been conducted to improve population immunization coverage and provide a “second opportunity” for measles vaccination to children aged 6 months to 14 years.</p> <p>Of the five major causes of death in complex emergencies (ALRI, diarrhoea, malaria, measles and malnutrition), measles is the only condition that can be prevented by using currently-available vaccine. Of all health interventions, measles immunization carries the highest health return for the money spent. The vaccine costs US\$ 0.26 per dose, which includes safe injection equipment. Measles immunization should be given the highest priority.</p>																																				

PREVENTION AND CONTROL MEASURES

Introduction	Measles control measures in emergency settings – refugee and IDP camps – have two major components: measles prevention through routine immunization and measles outbreak response (see below).
Immunization in emergency and post-emergency phases	<p>Immunize the population at risk as soon as possible. The priority is to immunize children aged 6 months to 15 years, regardless of vaccination status or history of disease. Expansion to older children is of lower priority and should be based on evidence of high susceptibility among this age group.</p> <p>Children who are vaccinated against measles before 9 months of age must receive a second measles vaccination. This should be given as soon as possible after 9 months, with an interval of at least 1 month between doses.</p> <p>All children aged 6 months to 5 years should also receive prophylactic vitamin A supplementation. If there is evidence of clinical vitamin A deficiency in older age groups, treatment with vitamin A should be initiated as per WHO guidelines.</p> <p>To ensure injection safety during immunization, auto-disable syringes and safety boxes are recommended. Safe disposal of used sharps should be ensured.</p>
Outbreak response	<p>Inform the health authorities if one or more suspected cases are identified.</p> <p>Confirm the suspected outbreak, following WHO guidelines.</p> <p>Investigate suspected case: check whether case fulfils the case definition, record date of onset, age and vaccination status.</p> <p>Confirm the diagnosis: collect blood specimens from 3–5 initial reported cases.</p> <p>Assess the extent of the outbreak and the population at risk.</p> <p>Implement outbreak response measures as follows:</p> <ul style="list-style-type: none"> – Give priority to proper <u>case management</u> and <u>immunization of groups at highest risk</u> (e.g. children aged 6 months to 15 years*) as soon as possible even in areas not yet affected where the outbreak is likely to spread. – Promote social mobilization of parents in order to ensure that previously unvaccinated children aged 6 months to 5 years are immunized. – The presence of several cases of measles in an emergency setting does not preclude a measles immunization campaign. Even among individuals who have already been exposed to, and are incubating the natural virus, measles vaccine, if given <u>within 3 days</u> of exposure, may provide protection or modify the clinical severity of the illness. – Isolation is not indicated and children should not be withdrawn from feeding programmes. <p>* This range can be reduced if resources are limited, e.g. 6 months–12 years or 6 months–5 years).</p>
Case management	<p>For uncomplicated cases</p> <ul style="list-style-type: none"> – Give vitamin A immediately upon diagnosis and ensure that the child receives a second dose the next day (can be given to parent to administer at home). – Advise the parent to treat the child at home (control fever and provide nutritional feeding). <p>For cases with non-severe eye, mouth or ear complications</p> <ul style="list-style-type: none"> – Children can be treated at home. – Give vitamin A immediately upon diagnosis and ensure that the child receives a second dose the next day (can be given to parent to administer at home). – If pus is draining from the eyes, clean eyes and treat with 1% tetracycline eye ointment. – If there are mouth ulcers, treat with gentian violet.

	<ul style="list-style-type: none"> – If pus is draining from the ear, clean ear discharge and treat with antibiotics for 5 days (amoxicillin – 1st line, or co-trimoxazole – 2nd line), as per national ARI policy and IMCI guidelines currently under development). – Treat malnutrition and diarrhoea, if present, with sufficient fluids and high-quality diet. <p>For cases with severe, complicated measles (any general danger signs,* clouding of cornea, deep or extensive mouth ulcers, pneumonia)</p> <ul style="list-style-type: none"> – Refer urgently to hospital. – Treat pneumonia with an appropriate antibiotic. – If there is clouding of the cornea or pus draining from the eye, clean eyes and apply 1% tetracycline eye ointment. – If the child has any eye signs indicating vitamin A deficiency (i.e. night blindness, Bitôt spots, conjunctival and corneal dryness, corneal clouding or corneal ulceration), then he or she should receive a third dose of vitamin A 2–4 weeks later. <p>* Inability to drink or breastfeed, vomiting everything, convulsions, lethargy or unconsciousness.</p>
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14. MENINGOCOCCAL DISEASE (meningitis and meningococcal septicaemia)

DESCRIPTION

Infectious agent	Bacterium: <i>Neisseria meningitidis</i> serogroups A, B, C, Y, W135
Case definition	<p>Clinical case definition</p> <p>An illness with sudden onset of fever (>38.5 °C rectal, >38.0 °C axillary) and one or more of the following:</p> <ul style="list-style-type: none"> – neck stiffness – altered consciousness – other meningeal sign or petechial or purpural rash <p>In patients aged less than one year, suspect meningitis when fever is accompanied by a bulging fontanelle.</p> <p>Laboratory criteria</p> <ul style="list-style-type: none"> – Positive cerebrospinal fluid (CSF) antigen detection, or – Positive bacterial culture <p>Case classification</p> <p>Suspected: a case that meets the clinical case definition above.</p> <p>Probable: a suspected case as defined above and:</p> <ul style="list-style-type: none"> – turbid CSF (with or without positive Gram stain), or – continuing epidemic <p>Confirmed: a suspected or probable case with laboratory confirmation.</p>
Mode of transmission	Direct contact with respiratory droplets.
Incubation	Incubation period varies between 2 and 10 days (most commonly 4 days).
Period of communicability	From the beginning of the symptoms until 24 hours after the institution of therapy, but asymptomatic carriers are the most important source of infection.

EPIDEMIOLOGY

Burden	Cases and deaths of meningococcal meningitis reported to WHO:			
	Angola	Cases	Deaths	Case-fatality rate%
	Jan - Dec 2004	444	66	14.9
	Jan – Dec 2003	47	8	17.0
	Jan – Dec 2002	1462	176	12.0
	Jan – Dec 2001	No data available	No data available	No data available
	Jan – Sept 2000	135	18	13.0
	Jan – Dec 1999	29	5	17.0
	(Data source: WHO/WHO Regional Office for Africa – Integrated disease surveillance, 2005).			
Geographical distribution	Cases reported to WHO have been primarily from Benguela, Cunene, Luanda, Lunda Sul and Cuando Cubango provinces.			
Seasonality	No data available.			

Alert threshold¹	<p>Population >30 000: 5 cases per 100 000 inhabitants per week or a cluster of cases in an area.</p> <p>Population <30 000: 2 cases in 1 week or an increase in the number of cases compared with previous non-epidemic years</p> <p>Intervention: 1. inform authorities – 2. investigate – 3. confirm – 4. treat cases 5. strengthen surveillance – 6. prepare</p>																																																																												
Epidemic threshold	<p>Population >30 000: 10 cases per 100 000 inhabitants per week if – no epidemic for 3 years and vaccination coverage <80%; – alert threshold crossed early in the dry season. 15 cases per 100 000 inhabitants per week in other situations.</p> <p>Population <30 000: – Five cases occur in 1 week or – Doubling of the number of cases in a 3-week period or – For mass gatherings, refugees and displaced persons, 2 confirmed cases in 1 week are enough to initiate vaccination of the population – Other situations should be studied on a case-by-case basis.</p> <p>Intervention: 1. mass vaccination – 2. distribute treatment to health centres 3. treat according to epidemic protocol – 4. inform the public</p> <p>Caution: current thresholds are established from data in African meningitis belt countries and have not been validated in countries outside the belt.</p>																																																																												
Recent epidemics in the country	<p>May–October 2001: A total of 332 cases and 30 deaths were reported to WHO. The provinces primarily affected were Benguela, Cunene, Luanda, Lunda Sul and Cuando Cubango. <i>Neisseria meningitidis</i> serogroup A was confirmed. As part of epidemic response activities, a mass vaccination campaign was launched targeting the population over 2 years of age in Balombo district, Benguela province.</p> <p>Available details of the meningitis outbreak in Matala, Huila province from week 19 to week 33 (2001) were:</p> <table border="1" data-bbox="497 1279 1378 1944"> <thead> <tr> <th>Area</th> <th>Cases</th> <th>Deaths</th> <th>Case-fatality rate (%)</th> </tr> </thead> <tbody> <tr><td>Cote Cowboy</td><td>11</td><td>1</td><td>9.1</td></tr> <tr><td>De Maio</td><td>4</td><td>0</td><td>0</td></tr> <tr><td>Colonato</td><td>1</td><td>0</td><td>0</td></tr> <tr><td>De Novembro</td><td>5</td><td>1</td><td>20</td></tr> <tr><td>Camucua</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Canongundo</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Calumbilo</td><td>4</td><td>1</td><td>25</td></tr> <tr><td>Cahululu</td><td>3</td><td>0</td><td>0</td></tr> <tr><td>KM7</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>KM 15</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Matala Sede</td><td>3</td><td>0</td><td>0</td></tr> <tr><td>Castanheira</td><td>1</td><td>0</td><td>0</td></tr> <tr><td>Muquequete</td><td>1</td><td>0</td><td>0</td></tr> <tr><td>Caleta</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Chinhanha</td><td>1</td><td>1</td><td>100</td></tr> <tr><td>Kandajanguite</td><td>4</td><td>0</td><td>0</td></tr> <tr><td>Mevayela</td><td>2</td><td>0</td><td>0</td></tr> <tr> <td>TOTAL</td> <td>40</td> <td>4</td> <td>Average: 10</td> </tr> </tbody> </table> <p>(Data source: WHO/CDS - Outbreak Alert and Response Operations, 2005).</p>	Area	Cases	Deaths	Case-fatality rate (%)	Cote Cowboy	11	1	9.1	De Maio	4	0	0	Colonato	1	0	0	De Novembro	5	1	20	Camucua	0	0	0	Canongundo	0	0	0	Calumbilo	4	1	25	Cahululu	3	0	0	KM7	0	0	0	KM 15	0	0	0	Matala Sede	3	0	0	Castanheira	1	0	0	Muquequete	1	0	0	Caleta	0	0	0	Chinhanha	1	1	100	Kandajanguite	4	0	0	Mevayela	2	0	0	TOTAL	40	4	Average: 10
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¹ Detecting meningococcal meningitis epidemics in highly-endemic African countries. *WER*, 2000, 38: 306–309.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Travel, migration and displacement facilitate the circulation of virulent strains within a country, or from country to country.
Overcrowding	Yes	High density of susceptible people is an important risk factor for outbreaks. Crowding during emergencies, or because of cattle or fishing-related activities, or in military camps and schools, facilitates spread of the disease.
Poor access to health services	Yes	Case identification is crucial for rapid implementation of control measures. Case-fatality ratio in absence of treatment is very high (50%).
Food shortages	No	
Lack of safe water and poor sanitation	No	
Others	Yes	Concurrent infections: upper respiratory tract infections may increase transmission of meningitis. Dry, windy and dusty seasons increase transmission of the disease. Low vaccination coverage (<80%) increases the number of susceptible people in the population.
Risk assessment conclusions		High risk of epidemics exists in overcrowded camp settings such as IDPs and military camps. Available data supports the inclusion of the country in the epidemic-susceptible areas of the Southern Africa Region running west from Mozambique and Malawi, and including Zambia, southern Democratic Republic of the Congo (Katanga Province) and northern Namibia. These areas are characterized by a mean annual rainfall (300–1100 mm/year) similar to that of the meningitis belt.

PREVENTION AND CONTROL MEASURES

Case management	<p>Meningococcal disease (either meningitis or septicaemia) is potentially fatal and should always be viewed as a medical emergency.</p> <p><u>Non-epidemic conditions</u></p> <ul style="list-style-type: none"> • Admission to a hospital or health centre is necessary for diagnosis (lumbar puncture and CSF examination). • Lumbar puncture must be done as soon as meningitis is suspected, before starting antimicrobials. • As infectivity of patients is moderate and disappears quickly following antimicrobial treatment, isolation of the patient is not necessary. • Antimicrobial therapy must be instituted as soon as possible after lumbar puncture (without waiting for laboratory results), and should be combined with supportive treatment. <p>Initial antimicrobial therapy should be effective against the three major causes of bacterial meningitis until bacteriological results are available.</p>
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	Age group	Probable pathogens	Antibiotic of first choice	Alternative antibiotics
	Adults	<i>S. pneumoniae</i>	Benzylpenicillin	Ampicillin or amoxicillin
	Children >5 years			chloramphenicol ceftriaxone or cefotaxime
	Children 1 month–5 years	<i>H. influenzae</i> <i>S. pneumoniae</i> <i>N. meningitidis</i>	Ampicillin or amoxicillin ^a	Ceftriaxone or cefotaxime
	Neonates (< 1 month)	Gram-negative bacteria Group B <i>streptococci</i> <i>Listeria</i>	Ampicillin and gentamicin	Ceftriaxone or cefotaxime ^b chloramphenicol (at reduced doses)
	<p>^a If <i>H. influenzae</i> is highly resistant to ampicillin, chloramphenicol should be given as well.</p> <p>^b No effect on <i>Listeria</i>.</p>			
	<p>Once diagnosis of meningococcal disease has been established:</p> <ul style="list-style-type: none"> – Either <i>penicillin</i> or <i>ampicillin</i> is the drug of choice. – <i>Chloramphenicol</i> is a good and inexpensive alternative. – In Angola, the drugs of choice include <i>benzylpenicillin</i> or <i>chloramphenicol</i> injection or other antibiotics based on antimicrobial susceptibility tests. – The third-generation cephalosporins, <i>ceftriaxone</i> and <i>cefotaxime</i>, are excellent alternatives but are more expensive. – A 7-day course is still the general rule for the treatment of meningococcal disease beyond the neonatal period. – The long-acting (oily) form of <i>chloramphenicol</i> has also been shown to be effective, and is preferred for mass interventions. <p><u>Epidemic conditions</u></p> <p>During epidemics of confirmed meningococcal disease, case management needs to be simplified to permit the health system to respond to rapidly increasing numbers of cases.</p> <ul style="list-style-type: none"> • Diagnosis: As the flood of patients could make the routine use of lumbar puncture to confirm meningitis impossible, every suspected case of meningitis should be considered and treated as one of meningococcal meningitis. • Treatment: Long-acting oily chloramphenicol (100 mg/kg up to 3 g in a single dose) given intramuscularly, is the drug of choice for all age groups, particularly in areas with limited health facilities. For those who do not improve rapidly, an additional dose of the same antimicrobial, 48 hours after the first dose, is recommended. 			
Prevention	<p><u>Non-epidemic conditions</u></p> <p>Vaccination: To prevent secondary cases around a sporadic case of meningococcal disease, vaccine can be used for close contacts of patients with meningococcal disease due to serogroups A, C, Y, or W135.</p> <p>Chemoprophylaxis: The aim of chemoprophylaxis is to prevent secondary cases by eliminating nasopharyngeal carriage. To be effective in preventing secondary cases, chemoprophylaxis must be initiated as soon as possible (i.e. not later than 48 hours after diagnosis of the case). Its use should be restricted to close contacts of a case, who are defined as:</p> <ul style="list-style-type: none"> – household members: persons sleeping in the same dwelling as the case; – institutional contacts: persons who share sleeping quarters (room-mates in boarding schools or orphanages; persons sharing barracks in military camps); – nursery school or childcare-centre contacts: children and teachers who share a classroom with the case; 			

	<ul style="list-style-type: none"> – others: persons who have had contact with the patient’s oral secretions through kissing or sharing of food and beverages.
<p>Prevention</p>	<p><u>Epidemic conditions</u></p> <p>Vaccination: A mass vaccination campaign can halt an epidemic of meningococcal disease if appropriately carried out. Laboratory diagnosis and confirmation of epidemic serogroups will guide the type of vaccine needed, either meningococcal polysaccharide bivalent A/C (if serogroup A or C is confirmed as the epidemic serogroup), or meningococcal polysaccharide tetravalent vaccine A/C/Y/W135 (if serogroup Y or W135 is confirmed). Vaccination should be concentrated in the area where the epidemic is maximal.</p> <ul style="list-style-type: none"> – Camp settings: Following confirmation (serogroup identified) of two cases, mass vaccination is recommended if the serogroup/s identified is/are included in either the bivalent (A/C) or tetravalent (A/C/Y/W135) vaccine. At-risk populations (e.g. 2–30 years of age) should be given priority. – General population: If an outbreak is suspected, vaccination should be considered only after careful investigation (including confirmation and serogroup identification) and assessment of the population group at highest risk. <p>Chemoprophylaxis: Chemoprophylaxis of contacts of meningitis patients is NOT warranted during an epidemic for several reasons. In small clusters or outbreaks among closed populations (e.g. extended household, boarding schools), chemoprophylaxis may still be appropriate.</p>

15. MONKEYPOX

DESCRIPTION

Infectious agent	Monkeypox virus (MPV), belonging to the orthopoxvirus group.
Case definition*	<p>Clinical description: the disease is described clinically as very similar to smallpox (pustular rash, fever, respiratory symptoms), except for marked lymphadenopathy (sometimes only in the neck or inguinal region, but more often generalized), often observed at the time of onset of fever, usually 1–3 days before the rash appears. Monkeypox is clinically milder than smallpox.</p> <p>Confirmed case: based on the results of analysis of biological specimens and clinical data.</p> <p>Suspected case: the occurrence, in a resident in the outbreak zone, of fever, and a vesicular-pustular rash similar to a WHO reference photograph.</p> <p>The last case definition is highly sensitive and therefore likely to recruit cases with other causes for a vesicular rash illness such as varicella-zoster.</p>
Mode of transmission	<p>The disease is a rare, sporadic zoonosis that is enzootic among mammals, including monkeys and squirrels, in the rainforests of western and central Africa.</p> <p>Animal contact (non-human primates and squirrels seem to be the most important reservoir species) and human-to-human transmission are involved. The exact mode of transmission is not clear and needs to be determined. There is no evidence to date that person-to-person transmission alone can sustain monkeypox in the human population.</p>
Incubation	12 days (range 7–21 days).
Period of communicability	No data available.

EPIDEMIOLOGY

Burden	No data available.
Geographical distribution	The disease has never been reported in Angola. However, ecological conditions exist in Angola similar to areas in neighbouring Democratic Republic of the Congo where monkeypox outbreaks have occurred.
Seasonality	The disease has no clearly evident seasonal pattern.
Alert threshold	Not applicable given the scarcity of epidemiological information.
Recent epidemics in the country	No cases have been reported from Angola. However, cases are periodically reported from neighbouring Democratic Republic of the Congo.

RISK FACTORS FOR INCREASED BURDEN

Population movement	No	So far, cases have occurred mainly in isolated small villages in the rain forests of central and western Africa.
Overcrowding	Yes	Contact with an infected individual may increase the possibility of human-to-human transmission.
Poor access to health services	No	
Food shortages	No	

Lack of safe water and poor sanitation	No	
Others	Yes	<p>Contact with wild animals. Cases occur mainly among villagers who are engaged for at least part of their time as hunters or gatherers.</p> <p>Civil unrest and economic collapse have been indicated as factors leading to a deeper and more frequent penetration of people into rain forests in search of food, thus increasing the risk of contact with monkeypox virus.</p>
Risk assessment conclusions		<p>No cases of monkeypox have been reported from Angola. However, the disease was first identified in 1970 in neighbouring Democratic Republic of the Congo (Basankusu Hospital, Equateur Province). Since then, most cases worldwide have occurred in this country.</p> <p>Human monkeypox, although sporadic, is a life-threatening disease.</p> <p>Extensive studies of this zoonotic infection in the 1970s–1990s indicate a largely sporadic disease whose probable mode of transmission is contact with wild animals. Monkeypox virus has a low potential for person-to-person transmission.</p> <p>There is no evidence that monkeypox virus can sustain itself in the human population.</p> <ul style="list-style-type: none"> • Handling or eating dead monkeys or squirrels is a source of infection for humans. • Co-circulation and/or coinfection with varicella–zoster virus (VZV, chickenpox virus) can be responsible for a number of cases associated with febrile pustular rash. <p>Vaccinia (smallpox) vaccination had ceased by 1983 after global smallpox eradication, leading to an increase in the proportion of susceptible individuals in populations.</p>

PREVENTION AND CONTROL MEASURES

Case Management	<p>Symptomatic treatment. If necessary, measures to avoid secondary infection of pustules (hygiene and antibiotics).</p> <p>Cidofovir [(S)-1-(3-hydroxy-2-phosphonylmethoxypropyl)cytosine] is the first promising antiorthopoxviral drug. It has been licensed since 1996 for clinical use in the treatment of cytomegalovirus retinitis in AIDS patients. Laboratory data show that cidofovir should be effective in the therapy of monkeypox in humans. Cidofovir has significant toxicity and should only be considered for the treatment of severe monkeypox infections, not for prophylactic use.</p>
Epidemic control	<p>Early detection and notification of cases allows for timely mobilization of resources needed for epidemic control.</p> <p>See Annex 4 <i>Guidelines for outbreak control</i> in this Communicable disease toolkit.</p>
Immunization	<p>Vaccinia vaccine is about 85% efficacious in preventing human monkeypox.</p>
Prevention	<p>Vaccination of personnel at risk should be considered.</p> <p>Vaccination is contraindicated if immunosuppression is present (e.g. HIV/AIDS).</p> <p>Avoid direct and prolonged human contact with possible reservoir animals in endemic areas.</p>

16. ONCHOCERCIASIS (river blindness)

DESCRIPTION

Infectious agent	<i>Onchocerca volvulus</i> , a filarial worm belonging to the class Nematoda.
Case definition	<p><u>Clinical description</u></p> <p>In an endemic area, a person with fibrous nodules in subcutaneous tissues. These must be distinguished from lymph nodes or ganglia.</p> <p>Persons suffering from onchocerciasis may experience:</p> <p>Skin lesions: dermal changes are secondary to tissue reaction to the motile larvae as they migrate subcutaneously, or to their destruction in the skin.</p> <ul style="list-style-type: none"> — Itching: the pruritus of onchocerciasis is the most severe and intractable that is known. In lightly-infected persons, this may persist as the only symptom. — Rashes: the rash usually consists of many raised papules, which are due to microabscess formation, and may disappear within a few days or may spread. Sowda, from the Arabic for black or dark, is an intensely pruritic eruption usually limited to one limb and including oedema, hyperpigmented papules and regional lymphadenopathy. — Depigmentation of the skin: areas of depigmentation over the anterior shin, with islands of normally pigmented skin, commonly called “leopard skin”, are found in advanced dermatitis. — Subcutaneous nodules: these are asymptomatic subcutaneous granulomas, 0.5–3.0 cm, resulting from a tissue reaction around adult worms. They occur most often over bony prominences: in Africa, the nodules are often located over the hips and lower limbs. — Lymphadenopathy: frequently found in inguinal and femoral areas, lymphadenopathy can result in “hanging groin” (especially when associated with skin atrophy and loss of elasticity) and elephantiasis of the genitalia. <p>Eye lesions: ocular onchocerciasis is related to the presence of live or dead microfilariae. Involvement of all tissues of the eye has been described, and many changes in both anterior and posterior segments of the eye can occur. The more serious lesions lead to serious visual impairment including blindness.</p> <p>General debilitation: onchocerciasis has also been associated with weight loss and musculoskeletal pain.</p> <p><u>Laboratory criteria</u></p> <p>Presence of one or more of the following:</p> <ul style="list-style-type: none"> — microfilariae in skin snips taken from the iliac crest (Africa) or scapula (Americas); — adult worms in excised nodules; — typical ocular manifestations, such as slit-lamp observations of microfilariae in the cornea, the anterior chamber or the vitreous body; — serology (especially for non-indigenous persons). <p><u>Case classification</u></p> <p>Suspected: A case that meets the clinical case definition. Probable: Not applicable. Confirmed: A suspected case that is laboratory confirmed.</p>

Mode of transmission	<p>Vector-borne. Onchocercal microfilariae produced in one person are carried to another by the bite of infected female blackflies belonging to the genus <i>Simulium</i> (mainly <i>S. damnosum</i> but in some foci <i>S. neavei</i>). The blackfly lays its eggs in the water of fast-flowing rivers – thus the name “river blindness”. Adult blackflies emerge after 8–12 days and live for up to 4 weeks, during which time they can cover hundreds of kilometres in flight.</p> <p>Microfilariae are ingested by a blackfly feeding on an infected person; these microfilariae then penetrate the thoracic muscles of the fly. Here, a few of them develop into infective larvae and after several days migrate to the cephalic capsule to be liberated into human skin during the bite wound of a subsequent blood meal.</p> <p>Infective larvae develop into adult parasites in the human body where adult forms of <i>O. volvulus</i> can live for up to 14–15 years and are often found encased in fibrous subcutaneous nodules. Each adult female produces millions of microfilariae that migrate under the skin and through the eyes, producing a variety of dermal and ocular symptoms (see above).</p> <p>Humans are the only reservoir. Other <i>Onchocerca</i> species found in animals cannot infect humans but may occur together with <i>O. volvulus</i> in the insect vector.</p>
Incubation	<p>Larvae take at least 6–12 months to become adult worms. Adult worms are usually innocuous, apart from the production of the subcutaneous nodules (these can develop as early as 1 year after infection).</p> <p>The main pathologic sequelae of <i>O. volvulus</i> infection are caused by the death of microfilariae in skin and ocular tissue, where they can be found after a period of 7–34 months.</p> <p>Microfilariae are found in the skin usually after only 1 year or more from the time of the infective bite.</p>
Period of communicability	<p>Human to blackfly Infected individuals can infect blackflies as long as living microfilariae occur in their skin. Microfilariae are continuously produced by adult female worms (about 700 per day), and can be found in the skin after a prepatent period of 7–34 months following introduction of infective larvae. They may persist for up to 2 years after the death of the adult worms.</p> <p>Blackfly to human Blackfly vectors become infective (i.e. able to transmit infective larvae) 7–9 days after the blood meal.</p>

EPIDEMIOLOGY

Burden	<p>In 2004, the African Programme for Onchocerciasis Control (APOC) estimated that 3 052 735 people were at risk of getting the disease following the Rapid Epidemiological Mapping of Onchocerciasis (REMO) conducted in 2002 and 2003. To date, six Community-Directed Treatment with Ivermectin (CDTI) projects have been approved by APOC in order to control the disease.</p> <p>Due to poor infrastructure and scarcity of well-qualified health personnel, only the Lunda CDTI project had been launched on 17 January 2005 in collaboration with World Vision International. The presence of co-endemicity with loiasis in Cabinda and Bengo Provinces have also delayed the launching of CDTI projects in Angola. The Ultimate Treatment Goal (UTG) for onchocerciasis has been estimated in 2004 at 2 564 298 people.</p>
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Geographical distribution	Onchocerciasis is distributed throughout the country. The endemicity varies from one area to another. Foci of the disease have been identified in Bengo, Cabinda, Huila, Kuando Kubango, Lunda (Norte and Sul) and Moxico Provinces.
Seasonality	Vector breeding and disease transmission are perennial in some locations.
Recent epidemics	Not applicable.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Migration can lead to the establishment of new foci, particularly in the north-east parts of the country bordering Katanga Province in the Democratic Republic of the Congo.
Overcrowding	Yes	Increased risk of infectious bites.
Poor access to health services	Yes	CDTI is an effective tool for the control of transmission, although health infrastructure and access to health services are necessary.
Food shortages	No	
Lack of safe water and poor sanitation	No	
Others	Yes	Subsistence farming (rice, cassava and groundnuts), fishing, bathing and (in some areas) especially mining (gold, diamond and "coltan"), have been found to be the main activities associated with increased risk of exposure of the population to blackfly bites in forested areas. Proximity to fast-flowing rivers.
Risk assessment conclusions		Angola was included in APOC launched in 1996. The aim is to establish effective and self-sustainable CDTI throughout the endemic areas covered by the Programme. In high-risk areas of co-endemicity with <i>Loa loa</i> , it is mandatory to conduct a rapid assessment of loiasis (RAPLOA) in order to apply the Mectizan Expert Committee/Technical Consultative Committee of APOC (MEC/TCC) guidelines for the management of possible severe adverse events, which may occur during ivermectin treatment.

PREVENTION AND CONTROL MEASURES

Case management	<p>Administration of ivermectin once a year over a period of at least 15–20 years will reduce infection to insignificant levels and prevent the appearance of clinical manifestations. The recommended dosage is equivalent to 150 µg/kg body weight (in practice, dosage is according to height, using 1–4 tablets of 3 mg formulation). Established clinical manifestations are also treated by ivermectin.</p> <p>Treatment with ivermectin is contraindicated in:</p> <ul style="list-style-type: none"> – children under 5 years (age), less than 15 kg (weight), or less than 90 cm (height); – pregnant women; – lactating mothers of infants less than one week old; – severely-ill persons. <p>Note: ivermectin should be used with extreme caution in areas co-endemic for <i>Loa loa</i>.</p>
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Epidemic control	Recrudescence of transmission may occur and can be managed by ivermectin administration if mass treatment programmes maintain good treatment coverage.
Prevention	<p>The two main strategies for prevention and control of onchocerciasis in Africa are:</p> <p>1. Vector control</p> <p>Destruction of <i>Simulium</i> larvae by application of insecticides such as temephos (Abate®) through aerial spraying to breeding sites in fast-flowing rivers, in order to interrupt the cycle of disease transmission. Once the cycle has been interrupted for 14–15 years, the reservoir of adult worms dies out in the human population, thus eliminating the source of the disease. This was the basic strategy of the Onchocerciasis Control Programme (OCP).</p> <p>In the west African savannah zone, onchocerciasis was a severely blinding disease. It was also responsible for the depopulation of fertile river valleys in OCP countries and was thus a major impediment to economic development. The large-scale vector control operations of the OCP, based on the aerial application of insecticides, were therefore considered economically justified.</p> <p>2. Community-directed treatment with ivermectin (CDTI)</p> <p>CDTI involves the once-yearly administration of ivermectin (150 µg/kg body weight). The introduction of ivermectin in 1987 provided a feasible chemotherapeutic regimen for large-scale treatment of onchocerciasis for the first time.</p> <p>Ivermectin is an effective microfilaricide that greatly reduces the numbers of skin microfilariae for up to a year.</p> <p>It alleviates symptoms (greatly reduces morbidity by preventing development of ocular lesions and blindness) and renders the person less infective for the vector by greatly reducing parasite transmission. This, however, does not kill the adult worm (which can survive for up to 14–15 years), and annual, long-term (15–20 years), large-scale treatment therefore needs to be continued.</p> <p>CDTI is the main strategy adopted by APOC. The current APOC strategy consists of distribution house-to-house or at central meeting points in villages. In the 19 countries included in this programme, onchocerciasis remains a major cause of blindness, but does not appear to be the cause of major depopulation of fertile lands. Partly for this reason, large-scale vector control operations of the OCP are not likely to be as cost-effective as they have been in the OCP area.</p> <p>APOC administers ivermectin to communities in high-risk areas as determined by REMO and geographical information systems. Continued annual distribution of ivermectin will control onchocerciasis to a point where it is no longer a public health problem or an impediment to economic development¹ (Dadzie Y et al. Final report of the conference on the eradicability of onchocerciasis. <i>Filaria Journal</i>, 2003, 2(1):2).</p> <p>So far there are six approved CDTI projects being undertaken with collaboration of NGOs in Angola:</p> <ol style="list-style-type: none"> 1. Lunda CDTI project (Norte and Sul): launched on 17 January 2005 in collaboration with World Vision International. 2. Cabinda CDTI project: still pending. MLAL (Italy) is the supporting non governmental developmental organization (NGDO). 3. Moxico CDTI project: still pending. NOTF and GOAL have been identified as the supporting NGDOs. 4. Bengo CDTI project: still pending, most likely because of co-endemicity risk with loiasis. AFRICARE is the supporting NGDO. 5. Kuando Kubango CDTI project: still pending probably because of land mines. Follow-up with MALTERS which has been presented as the supporting NGO of the project. 6. Huila CDTI project: supporting NGDO to be determined.

17. PERTUSSIS (whooping cough)

DESCRIPTION

Infectious agent	<i>Bordetella pertussis</i> , the pertussis bacillus.
Case definition	<p>Clinical description The initial stage – the catarrhal stage – is characterized by the insidious onset of coryza (runny nose), sneezing, low-grade fever and a mild, occasional cough, similar to the common cold. It has an insidious onset, with an irritating cough that gradually becomes paroxysmal, usually within 1–2 weeks, and lasts for 1–2 months or longer.</p> <p>The patient has bursts, or paroxysms, of numerous, rapid coughs, apparently due to difficulty expelling thick mucus from the tracheobronchial tree. At the end of the paroxysm, a long inspiratory effort is usually accompanied by a characteristic whoop. In younger infants, periods of apnoea may follow the coughing spasms, and the patient may become cyanotic (turn blue).</p> <p>The disease lasts 4–8 weeks. In the convalescent stage, recovery is gradual. The cough becomes less paroxysmal. However, paroxysms often recur with subsequent respiratory infections for many months after the onset of pertussis. Fever is generally minimal throughout the course of pertussis.</p> <p>Complications most commonly include pneumonia. Otitis, haemorrhages (subconjunctival petechiae and epistaxis), convulsions, encephalopathies and death occur more rarely.</p> <p>Complications are more frequent and severe in younger infants. In developing countries case-fatality rates are estimated at 3.7% for children aged less than 1 year and 1% for children aged 1–4 years. Older persons (i.e. adolescents and adults), and those partially protected by the vaccine, may become infected with <i>B. pertussis</i>, but usually have milder disease.</p> <p>Clinical case definition A case diagnosed as pertussis by a physician, or A person with a cough lasting at least 2 weeks with at least one of the following symptoms:</p> <ul style="list-style-type: none"> – paroxysms (i.e. fits) of coughing – inspiratory “whooping” – post-tussive vomiting (i.e. vomiting immediately after coughing) without other apparent cause. <p>Laboratory criteria Isolation of <i>B. pertussis</i> Detection of genomic sequences by polymerase chain reaction (PCR) Positive paired serology</p> <p>Case classification Clinical case: A case that meets the clinical case definition. Confirmed case: A clinical case that is laboratory confirmed.</p>
Mode of transmission	<p>Primarily by direct contact with discharges from respiratory mucous membranes of infected persons via the airborne route. Humans are the only hosts.</p> <p>Although the disease may be milder in older persons, these infected persons may transmit the disease to other susceptible persons, including non-immunized or under-immunized infants. Adults are often found to be the first case in a household with multiple pertussis cases.</p>
Incubation	The incubation period usually lasts 7–10 days and rarely more than 14 days.

Period of communicability	<p>Pertussis is highly communicable in the early, catarrhal stage. Communicability gradually decreases after the onset of the paroxysmal cough.</p> <p>Untreated patients may be contagious for up to 3 weeks after the onset of paroxysmal cough in the absence of treatment, or up to 5 days after onset of treatment.</p>
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EPIDEMIOLOGY

Burden	Number of cases of pertussis reported nationally			
	Year	Cases	Year	Cases
	2004	1 675	1994	No data available
	2003	2 654	1993	1 458
	2002	0	1992	No data available
	2001	740	1991	10 078
	2000	560	1990	14 420
	1999	No data available	1989	21 674
	1998	No data available	1985	15 846
	1996	No data available	1980	54 126
1995	No data available			
(Data provided by MOH through WHO-UNICEF Joint Reporting Form and WHO Regional offices)				
Geographical distribution	No details of the geographical distribution of cases reported are available.			
Seasonality	Pertussis has no distinct seasonal pattern, but activity may increase in the summer and autumn.			
Alert threshold	One case is sufficient to alert and must be investigated, especially if the case occurs in high-risk areas (low vaccination coverage).			
Recent epidemics in the country	No data available.			

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Facilitates spread of <i>B. pertussis</i> .
Overcrowding	Yes	Crowded conditions facilitate transmission. The disease is usually introduced into a household by an older sibling or a parent.
Poor access to health services	Yes	No access to routine immunization services. Susceptibility of non-immunized individuals is universal, and vaccination is the mainstay of pertussis control. Low vaccination coverage is a major risk factor for increased transmission (Diphtheria–Tetanus–Pertussus DTP3 coverage <80%).
Food shortages	No	
Lack of safe water and poor sanitation	No	

Others	Yes	Low vaccination coverage (<80%).																																										
		<p style="text-align: center;">DTP3 vaccination national coverage</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Year</th> <th style="width: 25%;">Coverage (%)</th> <th style="width: 25%;">Year</th> <th style="width: 25%;">Coverage (%)</th> </tr> </thead> <tbody> <tr> <td>2004</td> <td>59</td> <td>1994</td> <td>27</td> </tr> <tr> <td>2003</td> <td>46</td> <td>1993</td> <td>30</td> </tr> <tr> <td>2002</td> <td>47</td> <td>1992</td> <td>21</td> </tr> <tr> <td>2001</td> <td>41</td> <td>1991</td> <td>26</td> </tr> <tr> <td>2000</td> <td>31</td> <td>1990</td> <td>24</td> </tr> <tr> <td>1999</td> <td>22</td> <td>1989</td> <td>18</td> </tr> <tr> <td>1998</td> <td>45</td> <td>1988</td> <td>12</td> </tr> <tr> <td>1997</td> <td>41</td> <td>1987</td> <td>10</td> </tr> <tr> <td>1996</td> <td>28</td> <td>1980</td> <td>No data available</td> </tr> <tr> <td>1995</td> <td>42</td> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: center;">(Data source: WHO-UNICEF immunization coverage estimates, 2005)</p>	Year	Coverage (%)	Year	Coverage (%)	2004	59	1994	27	2003	46	1993	30	2002	47	1992	21	2001	41	1991	26	2000	31	1990	24	1999	22	1989	18	1998	45	1988	12	1997	41	1987	10	1996	28	1980	No data available	1995	42
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Risk assessment conclusions		<p>Yearly fluctuations in the number of reported cases reflect a weak surveillance system and mask the actual number of cases in Angola.</p> <p>Pertussis is a potential problem if introduced into crowded refugee settings with many non-immunized children. Given the low coverage, pertussis poses a serious threat in Angola.</p>																																										

PREVENTION AND CONTROL MEASURES

Case management	<p>The drug of choice for the treatment of pertussis is erythromycin or erythromycin estolate, which should be administered for 7 days to all cases and close contacts of persons with pertussis regardless of age and vaccination status, and for households where there is an infant less than 1 year of age. Clarithromycin and azithromycin are also effective.</p> <p>Drug administration both modifies the course of illness (if initiated early) and eradicates the organism from secretions, thereby decreasing communicability, but does not reduce symptoms except when given during the catarrhal stage or early in the paroxysmal stage.</p> <p>Symptomatic treatment and supportive case management are important.</p>
Immunization	<p>Vaccination is the most effective way to control pertussis. Active primary immunization against <i>B. pertussis</i> infection with the <i>whole-cell vaccine</i> (wP) is recommended in association with the administration of diphtheria and tetanus toxoids (DTP). No single-antigen pertussis vaccine is available.</p> <p>Although the use of <i>acellular vaccines</i> (aP) is less commonly associated with adverse reactions, price considerations affect their use, and wP vaccines are the vaccines of choice for most countries, including Angola.</p> <p>In general, pertussis vaccine (wP) is not given to persons aged 7 years or older, since local reactions may be increased in older children and adults and the disease is less severe in older children.</p> <p>The efficacy of the vaccine in children who have received at least three doses is estimated to be higher than 80%. Protection is greater against severe disease and begins to wane after about 3 years.</p>
Epidemic control	<p>The highly contagious nature of the disease leads to large numbers of secondary cases among non-immune contacts. Prophylactic antibiotic treatment (erythromycin) in the early incubation period may prevent disease, but difficulties of early diagnosis, costs involved, and concerns related to the occurrence of drug resistance all limit prophylactic treatment to selected individual cases.</p>

	<p>Priority must be given to:</p> <ul style="list-style-type: none">— protecting children under 1 year of age and pregnant females in the last 3 weeks of pregnancy because of the risk of transmission to the newborn, and— stopping infection among household members, particularly if these include children under 1 year of age and pregnant women in the last 3 weeks of pregnancy. <p>The strategy relies on chemoprophylaxis of contacts within a maximum delay of 14 days following the first contact with the index case.</p> <p>Index cases must avoid contact with day-care centres, schools and other places where susceptible individuals are grouped, for up to 5 days after commencing treatment or for up to 3 weeks after onset of paroxysmal cough, or until the end of cough, whichever comes first.</p> <p>All contact cases must have their immunization status verified and brought up to date.</p>
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18. PLAGUE

DESCRIPTION

Infectious agent	Bacterium: <i>Yersinia pestis</i> .
Case definition	<p><u>Suspected cases</u></p> <p>A high index of suspicion must be maintained in endemic areas. Initial signs and symptoms may be nonspecific, with fever, chills, malaise, myalgia, nausea, prostration, sore throat and headache.</p> <p><u>Clinical description</u></p> <p>There are three main forms of plague in humans: bubonic, septicaemic and pneumonic.</p> <p>Bubonic plague is the result of an insect bite (most commonly the flea, <i>Xenopsylla cheopis</i>) in which the plague bacillus travels through the lymphatic system to the nearest lymph node. The lymph node then becomes inflamed and is followed by bubo formation, a reaction in the body which occurs following the entrance of <i>Yersinia pestis</i>, the plague bacillus, through the skin and in the lymph nodes. It occurs most often in the lymph nodes in the inguinal area (90%), and less commonly in those in the axillary and cervical areas. The involved lymph nodes become swollen, inflamed, tender and may suppurate. Fever is usually present. Bubonic plague may progress to septicaemic plague. Untreated bubonic plague has a case-fatality rate of 50–60%.</p> <p>Septicaemic plague occurs when infection spreads directly through the bloodstream to diverse parts of the body including the meninges. Endotoxic shock and disseminated intravascular coagulation (DIC) may occur without localizing signs of infection. This form is usually fatal in the absence of antibiotic therapy.</p> <p>Pneumonic plague is a result of secondary infection caused by the plague bacillus spreading to the lungs. Mediastinitis or pleural effusion may develop. It also has a very high case-fatality rate. Patients who do not receive adequate therapy for primary pneumonic plague within 18 hours after onset of respiratory symptoms are not likely to survive.</p> <p><u>Laboratory diagnosis</u></p> <p>Microscopic visualization of characteristic bipolar staining, “safety pin”, ovoid, Gram-negative organisms in material aspirated from a bubo, sputum or CSF is suggestive but not conclusive evidence of infection.</p> <p>Examination by fluorescent antibody (FA) test or antigen-capture ELISA is more specific and is useful in sporadic cases.</p> <p>Diagnosis is confirmed by culture and identification of the causal organism in specimens, or by a four-fold or greater rise in antibody titre.</p>
Mode of transmission	<p><u>Rodent-to-human</u></p> <p>The most frequent source of exposure resulting in human disease has been the bite of infected fleas, especially <i>X. cheopis</i>. This occurs due to human intrusion into the zoonotic cycle; or by the entry of infected rats or their infected fleas into human habitats. This may lead to domestic rat epizootic and epidemic plague. Domestic pets, especially cats and dogs, may carry plague-infected wild rodent fleas into homes, and may transmit infection by their bites or scratches.</p> <p><u>Person-to-person</u></p> <p>Person-to-person transmission is possible via the human flea <i>Pulex irritans</i>. Activities that increase risk of exposure include hunting and animal trapping. Bubonic plague is not usually transmitted directly from person-to-person, unless there is contact with pus from suppurating buboes. Pneumonic plague may be highly communicable under appropriate climatic conditions and with overcrowding.</p>

	Nosocomial and laboratory-associated Handling of infected animals and tissue.
Incubation	From 1 to 7 days.
Period of communicability	Linked to the presence of the infected rodents and fleas. People remain infective throughout the symptomatic phase of the disease, and tissues also post mortem. Fleas may remain infective for months under suitable conditions of temperature and humidity.

EPIDEMIOLOGY

Burden	No data available. However, cases and alerts have been reported almost every year from neighbouring Democratic Republic of the Congo.
Geographical distribution	Plague is endemic in the African region. Three natural foci situated in the region of the great East-African Rift valley first identified in 1877. Strict surveillance of these endemic foci enabled diagnosis and detection of several flare-ups. The multimammate house rat was the principal agent until the black rat (<i>Rattus rattus</i>) invaded the region and a new ecological balance was established.
Seasonality	Related to the higher presence of the rodents (if infected). A moderate climate usually increases the rodent population. Recent epidemics in neighbouring Democratic Republic of the Congo occurred from January to October, with peak incidence in February–May and September.
Alert threshold	One case must lead to an alert.
Recent epidemics in the country	No outbreaks have been reported in Angola. However, major outbreaks were reported in neighbouring Democratic Republic of the Congo in the Ituri, Logo, Rimba, Nyarambe, Rethy and Bunia rural health zones. The most recent outbreak, with a total of 130 suspected cases including 57 deaths, occurred in March 2005 in Zobia, Bas-Uélé District, Oriental Province.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	People may move into active natural foci of the disease.
Overcrowding	Yes	Facilitates the transmission of pneumonic plague.
Poor access to health services	Yes	Delays treatment and institution of control measures. Identification and treatment of cases are important in containing disease transmission. Case-fatality rate is extremely high (50–60%) without proper and rapid treatment.
Food shortages	No	
Lack of safe water and poor sanitation	Yes	Poor sanitation increases the presence of rodents.
Others	No	

Risk assessment conclusions	<p>Since the early 1990s, an increased incidence of human plague has been observed particularly in Africa. The reasons for such a trend may be associated with both an actual increase in plague activity in its natural foci and an improvement of notification. Main rodent reservoirs and flea vectors have been identified in eastern and southern Africa. Though no cases have been reported in Angola, human plague has been reported from neighbouring Democratic Republic of the Congo (annually for past 20 years) and Zambia (1997 and 2001). Outbreaks have also occurred in Madagascar, Malawi, Mozambique, South Africa, Uganda and the United Republic of Tanzania. Angola is therefore considered to be at high risk for outbreaks of human plague.</p> <p>Protection from rats (e.g. finding a safe place when sleeping outdoors) and fleas (frequent change into clean clothes) are recommended.</p> <p>Travellers should stay away from plague patients. Should exposure be necessary for professional reasons, prophylactic antibiotics may be indicated.</p>
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PREVENTION AND CONTROL MEASURES

Case Management	<p>When human plague is suspected on clinical and epidemiological grounds, diagnostic specimens (sputum, blood, bubonic fluid) must be obtained immediately. The patient must be started on specific antimicrobial therapy without waiting for laboratory confirmation.</p> <p>Streptomycin 2 g/day (or 30 mg/kg/day up to a total of 2 g/day), given intramuscularly for 10 days or until 3 days after temperature has normalized is the most effective antibiotic regimen against plague, particularly the pneumonic form.</p> <p>Tetracyclines are also effective in the primary treatment of patients with uncomplicated plague: oral loading dose of 15 mg/kg not to exceed 1 g in total, followed by 25–50 mg/kg/day (up to a total of 2 g/day) for 10 days.</p> <p>Standard universal precautions should be applied to management of all suspected plague patients. These include prescribed procedures for handwashing, wearing of latex gloves, gowns, and protective devices to protect mucous membranes of the eye, nose and mouth during those procedures and patient-care activities likely to generate splashes or sprays of blood, body fluids, secretions and excretions.</p> <p>Isolation is only necessary for pneumonic plague.</p> <p>After a satisfactory response to drug therapy, reappearance of fever may result from a secondary infection or a suppurative bubo that may require incision and drainage.</p> <p>A septicaemic tendency has been observed (in Democratic Republic of the Congo), with possible involvement of the central nervous system and of the lungs. The latter may produce primary pneumonic plague in close contacts.</p>
Prevention	<p>The key is to reduce the likelihood of people being bitten by infected fleas, avoid direct contact with infective tissues and exudates, or reduce exposure to patients with pneumonic plague.</p> <p>Rodent control</p> <ul style="list-style-type: none"> – Health education of population on the modes of human and domestic animal exposure: the importance of rat-proofing, preventing access to food and shelter by peridomestic rodents through appropriate storage and disposal of food, garbage and refuse, and the importance of avoiding flea bites and by use of insecticides and repellents if possible. – Avoid pitching camp near rodent burrows. – Report dead or sick animals to health authorities or park rangers.

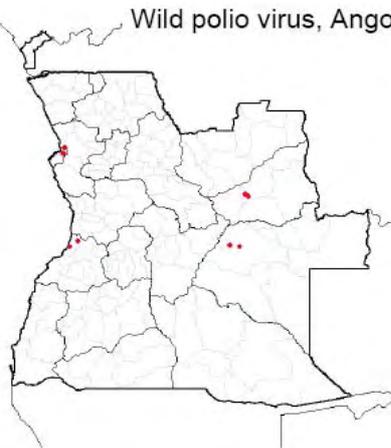
	<p>Hospital control</p> <ul style="list-style-type: none"> – Isolation: Rid patients and especially their clothing and baggage of fleas using a safe insecticide effective against local fleas. – Quarantine: Those who have been in a household or face-to-face contact with patients with pneumonic plague, including health workers, should be provided with chemoprophylaxis using tetracycline (15–30 mg/kg) or chloramphenicol (30 mg/kg) in four divided doses for 1 week after exposure ceases. <p>Epidemic precautions</p> <p>The first step in controlling an outbreak of plague is to interrupt transmission by controlling the flea vectors on rodents in expanding circles from the focus of infection.</p> <ul style="list-style-type: none"> – Investigate all suspected plague deaths (with autopsy and laboratory examinations) when indicated. – Mitigate public hysteria by appropriate information and educational releases. – Institute intensive flea control in expanding circles from known foci. – Implement rodent destruction within affected areas only after satisfactory flea control has been accomplished. Rodent control in affected areas (rodenticides, environmental management, ensuring rodent-proof food storage) must follow after intensive flea control programmes have been carried out. – Protect all contacts with tetracycline (15–30 mg/kg) or chloramphenicol (30 mg/kg) in four divided doses for 1 week after exposure ceases. – Protect field workers against fleas if possible. Dust clothing with insecticide powder and/or repellents daily. <p>Protective measures</p> <ul style="list-style-type: none"> – Routine immunization is not indicated. – Active immunization with a vaccine of killed bacteria confers some protection against bubonic plague (but not primary pneumonic plague) in most recipients for at least several months when administered in a primary series of three doses; doses 1 and 2, 1–3 months apart, followed 5–6 months later by dose 3. Booster doses are necessary every 6 months if high-risk exposure continues. Live attenuated vaccines are also used, but may produce more adverse reactions.
<p>Immunization</p>	<p>Worldwide, live attenuated and formalin-killed <i>Y. pestis</i> vaccines are available for human use. They do not protect against primary pneumonic plague.</p> <p>In general, immunizing communities is not feasible; further immunization is of little use during human plague outbreaks, since a month or more is required to develop a protective immune response.</p> <p>The vaccine is indicated for persons whose work routinely brings them into close contact with <i>Y. pestis</i>, such as laboratory technicians in plague reference laboratories and persons studying infected rodent colonies.</p>

19. POLIOMYELITIS

DESCRIPTION

Infectious agent	Poliovirus (Enterovirus group): types 1, 2, 3.
Case definition and classification	<p><u>Clinical description</u></p> <p>All three types of wild poliovirus may cause paralysis, although most infections (at least 95%) remain asymptomatic.</p> <p>Most symptomatic cases report a nonspecific febrile illness lasting a few days, corresponding to the viraemic phase of the disease. In a few cases, fever can be followed by the abrupt onset of meningitic and neuromuscular symptoms, such as stiffness in the neck and pain in the limbs. Initial symptoms may also include fatigue, headaches, vomiting, and constipation (or, less commonly, diarrhoea).</p> <p>In a very small percentage of cases ($\leq 1\%$ of infected susceptible persons), the gradual onset (2–4 days) of flaccid paralysis can then follow. Paralytic disease usually affects the lower limbs, and is typically asymmetric and more severe proximally. Bulbar (brainstem) paralysis may also occasionally occur, leading to respiratory muscle involvement and death unless artificial respiration is applied. The mortality from paralytic poliomyelitis is between 2% and 10%, mainly as a result of bulbar involvement and/or respiratory failure.</p> <ul style="list-style-type: none"> • Risk factors for paralytic disease are a large inoculum of virus, increasing age, pregnancy, recent tonsillectomy, strenuous exercise and intramuscular injections during the incubation period. • After the acute illness there is often a degree of recovery of muscle function; 80% of eventual recovery is attained within 6 months, although recovery of muscle function may continue for up to 2 years. • After many years of stable neurological impairment, new neuromuscular symptoms develop (weakness, pain and fatigue, post-polio syndrome) in 25–40% of patients. <p><u>Clinical case definition</u></p> <p>Acute flaccid paralysis (AFP) in a child aged <15 years, including Guillain–Barré syndrome;* or Any paralytic illness in a person of any age when polio is suspected.</p> <p>* For practical reasons, Guillain–Barré syndrome is considered as poliomyelitis until proven otherwise.</p> <p><u>Laboratory criteria</u></p> <p>Isolation of wild poliovirus in stool sample.</p> <p><u>Case classification</u></p> <p>Suspected: A case that meets the clinical case definition. Confirmed: AFP with laboratory-confirmed wild poliovirus in stool sample. Polio-compatible: AFP clinically compatible with poliomyelitis, but without adequate virological investigation.</p>
Mode of transmission	Poliovirus is highly communicable. Transmission is primarily person-to-person via the faecal–oral route.
Incubation	The time between infection and onset of paralysis is 4–30 days.
Period of communicability	From 36 hours after infection, for 4–6 weeks.

EPIDEMIOLOGY

Burden	<p style="text-align: center;">Number of reported polio cases in Angola</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Year</th> <th style="text-align: center;">Cases</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">2004</td><td style="text-align: center;">0</td></tr> <tr><td style="text-align: center;">2003</td><td style="text-align: center;">0</td></tr> <tr><td style="text-align: center;">2002</td><td style="text-align: center;">0</td></tr> <tr><td style="text-align: center;">2001</td><td style="text-align: center;">1</td></tr> <tr><td style="text-align: center;">2000</td><td style="text-align: center;">115</td></tr> <tr><td style="text-align: center;">1999</td><td style="text-align: center;">1103</td></tr> <tr><td style="text-align: center;">1998</td><td style="text-align: center;">7</td></tr> <tr><td style="text-align: center;">1997</td><td style="text-align: center;">15</td></tr> <tr><td style="text-align: center;">1996</td><td style="text-align: center;">81</td></tr> <tr><td style="text-align: center;">1995</td><td style="text-align: center;">152</td></tr> <tr><td style="text-align: center;">1994</td><td style="text-align: center;">54</td></tr> <tr><td style="text-align: center;">1993</td><td style="text-align: center;">149</td></tr> <tr><td style="text-align: center;">1992</td><td style="text-align: center;">0</td></tr> <tr><td style="text-align: center;">1991</td><td style="text-align: center;">0</td></tr> <tr><td style="text-align: center;">1990</td><td style="text-align: center;">No data reported</td></tr> <tr><td style="text-align: center;">1980</td><td style="text-align: center;">32</td></tr> </tbody> </table> <p style="text-align: center; font-size: small;">(Data provided by MOH through WHO-UNICEF Joint Reporting Form and WHO Regional office)</p>	Year	Cases	2004	0	2003	0	2002	0	2001	1	2000	115	1999	1103	1998	7	1997	15	1996	81	1995	152	1994	54	1993	149	1992	0	1991	0	1990	No data reported	1980	32
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Geographical distribution	Polio cases were found throughout the country, including border areas. The last indigenous wild poliovirus case was found in Luanda Province (date of onset 2 September 2001).																																		
Seasonality	Likely to increase during the rainy season.																																		
Alert threshold	Any AFP case must be notified and investigated. In Angola an outbreak can be suspected when there is a rapid increase in the reported number of new AFP cases within a district or in adjacent districts, occurring within a 2-month period.																																		
Recent epidemics in the country	<p>On June 2005, the Ministry of Health Angola reported a polio case. A 17-year old girl with a previous history of oral polio vaccine (OPV) developed fever and paralysis in both legs on 25 April in the metropolitan area of the capital, Luanda. Genetic sequencing of the type-1 wild poliovirus shows that it originated in India. Virological and epidemiological evidence suggest a recent importation. The affected child and her family had no travel history. An investigation did not detect spread beyond the community. Health authorities intensified AFP surveillance in the infected district, and a nationwide campaign was undertaken in July–August 2005. Eight cases of wild polio-virus have were reported and confirmed between May and August 2005 in Luanda, Banguela, Lunda Sul and Moxico Provinces.</p> <div style="text-align: center;"> <p>Wild polio virus, Angola, 2005</p>  </div> <p style="text-align: center; font-size: x-small;">Data in WHO HQ as of 11 Oct 2005</p>																																		

	<p>Polio outbreaks have been reported in the country since the start of polio eradication activities in Africa from 1996 until 2001. Previously, the last virologically-confirmed case in Angola occurred in September 2001: it was wild poliovirus type 1 in Saurimo district, Luanda Province. Additionally, in December 2001, January 2002 and February 2002, five cases of wild poliovirus type 1 were virologically confirmed as importations in an Angolan refugee family living in Zambia.</p> <p>Last wild poliovirus cases in neighbouring countries were as follows: Botswana: The last indigenous case occurred in 1997. However, in 2004 Botswana had an importation, due to the outbreak originating in northern Nigeria that spread across eight previously polio-free neighbouring countries. Democratic Republic of the Congo – 2000: The last case of W1 virus had a case of onset on 29 December 2000 in Tshilenge Province, Kasai-Oriental District. The last W3 date of onset was 17 September 2000 in Kindu Province, Maniema District. Namibia: The last indigenous wild poliovirus case was reported in 1995. Zambia: The last indigenous wild poliovirus case was in 1995. However, in late 2001 and early 2002 Zambia had an importation.</p> <p>(Data source: WHO/IVB data, 2005).</p>
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RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Facilitates transmission from infected to non-immune population.																		
Overcrowding	Yes	Very important in promoting transmission.																		
Poor access to health services	Yes	Limited access to routine immunization services. Risk of undetected poliovirus circulation.																		
Food shortages	No																			
Seasonality	Yes	Increased intensity of transmission during the rainy season.																		
Lack of safe water and poor sanitation	Yes	As spread by faecal–oral route, lack of water and poor sanitation promote transmission.																		
Others	Yes	<p>Unhygienic practices (e.g. not washing hands after using toilet).</p> <p>A cornerstone of the polio eradication strategy is the maintenance of high levels of routine immunization coverage with at least three doses of oral polio vaccine (OPV) among children less than 1 year of age. Routine immunization rates of 90% or above would provide substantial protection in the case of polio re-introduction. Coverage below 90% leaves the population quite exposed to paralytic cases if a wild poliovirus is re-introduced.</p> <p style="text-align: center;">Estimated national vaccination (Pol3) coverage*</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Year</th> <th style="border-top: 1px solid black; border-bottom: 1px solid black;">Coverage (%)</th> </tr> </thead> <tbody> <tr><td>2004</td><td>57</td></tr> <tr><td>2003</td><td>45</td></tr> <tr><td>2002</td><td>42</td></tr> <tr><td>2001</td><td>44</td></tr> <tr><td>2000</td><td>33</td></tr> <tr><td>1999</td><td>22</td></tr> <tr><td>1990</td><td>23</td></tr> <tr style="border-bottom: 1px solid black;"><td>1980</td><td>no data available</td></tr> </tbody> </table> <p>*The last coverage survey was conducted in 2000. (Data source: WHO-UNICEF immunization coverage estimates, 2004)</p>	Year	Coverage (%)	2004	57	2003	45	2002	42	2001	44	2000	33	1999	22	1990	23	1980	no data available
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<p>Risk assessment conclusions</p>	<p>Weak infrastructure and competing priorities have presented considerable challenges to polio eradication strategies. Despite this, high-quality surveillance is nowadays implemented, and stool specimen handling and transport seem to be adequate. Surveillance indicators have been good over the past 3–4 years. The AFP detection rate was 1.9 in 2004. However it is 0.9 in 2005 (target is 1 per 100 000) and adequate stool collection rate was 89 % in 2004 and is 96% in 2005 (target is $\geq 80\%$). Angola is therefore prepared to rapidly detect a polio importation (April 2005 update). However, only 45 % of children less than 1 year of age are routinely immunized with at least three doses of OPV (WHO/UNICEF estimate, 2003) – this means that the population in Angola is not protected if polio were to be re-introduced.</p> <p>The full implementation of polio eradication strategies has been complicated because of the prolonged armed conflict. Angola remains a high-risk country. The recent detection of a case of wild poliovirus in Botswana (2004) and Zambia (2002) have raised concern of possible spread to Angola. Geographic proximity or strong cultural or economic links to a polio-endemic country increase the risk of potential re-infection, as populations travel between countries and bring the poliovirus with them.</p> <p>All countries will remain at risk of importations, regardless of their geographic proximity to polio-endemic countries. It is therefore important that certification standard surveillance is widely maintained in order to avoid late detection of any wild poliovirus importation.</p> <p>Future priorities for the country include:</p> <ul style="list-style-type: none"> • Reaching previously non-immunized children and gaining access to all areas, including those that are inaccessible due to conflict. • Improving AFP surveillance to be able to better target supplementary immunization and mopping-up activities. • Assuring supply of adequate quantities of oral poliovirus vaccines for routine and supplementary immunization activities. • Improving basic infrastructure for the Expanded Programme on Immunization. <p>All countries are required to conduct a number of activities to minimize the risk of a wild poliovirus escaping into the environment, either from a research laboratory or a vaccine manufacturing site.</p> <p><u>These include the following:</u></p> <table border="1" data-bbox="526 1422 1428 1960"> <thead> <tr> <th data-bbox="526 1422 1117 1467">Activity</th> <th data-bbox="1117 1422 1428 1467">Status</th> </tr> </thead> <tbody> <tr> <td data-bbox="526 1467 1117 1534">1. National containment coordinator appointed</td> <td data-bbox="1117 1467 1428 1534">Completed</td> </tr> <tr> <td data-bbox="526 1534 1117 1624">2. List of all biomedical facilities which could hold wild poliovirus stock compiled</td> <td data-bbox="1117 1534 1428 1624">Not done</td> </tr> <tr> <td data-bbox="526 1624 1117 1736">3. Survey of all identified biomedical facilities to determine with certainty which hold wild polioviruses</td> <td data-bbox="1117 1624 1428 1736">Not done</td> </tr> <tr> <td data-bbox="526 1736 1117 1803">4. Finalized biomedical survey report submitted to WHO</td> <td data-bbox="1117 1736 1428 1803">Not done</td> </tr> <tr> <td data-bbox="526 1803 1117 1960">5. Process finalized to contain the wild poliovirus stocks under appropriate biosafety conditions, or destroy these stocks</td> <td data-bbox="1117 1803 1428 1960">This stage is to be commenced 1 year after the global interruption of wild poliovirus transmission</td> </tr> </tbody> </table> <p>The risk of polio re-introduction from a laboratory been not been addressed. (Data source: WHO Polio Eradication Initiative, www.polioeradication.org).</p>	Activity	Status	1. National containment coordinator appointed	Completed	2. List of all biomedical facilities which could hold wild poliovirus stock compiled	Not done	3. Survey of all identified biomedical facilities to determine with certainty which hold wild polioviruses	Not done	4. Finalized biomedical survey report submitted to WHO	Not done	5. Process finalized to contain the wild poliovirus stocks under appropriate biosafety conditions, or destroy these stocks	This stage is to be commenced 1 year after the global interruption of wild poliovirus transmission
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PREVENTION AND CONTROL MEASURES

Case management	<p>Management of the acute phase of paralytic poliomyelitis is supportive and symptomatic:</p> <ul style="list-style-type: none"> – bed rest – close monitoring of respiration; respiratory support in case of respiratory failure or pooling of pharyngeal secretions – moist hot-packs for muscle pain and spasms – passive physical therapy to stimulate muscles and prevent contractures – anti-spasmodic drugs – frequent turning to prevent bedsores. <p>If hospitalization is required, the patient should be isolated, particularly avoiding contact with children. Disinfection of any discharge, faeces and soiled articles, and immediate reporting of further cases are essential.</p>																																																																				
Immunization	<p>Two types of poliovirus vaccine are available:</p> <p><u>Oral poliovirus vaccine (OPV):</u></p> <p>OPV is an orally administered vaccine that includes live attenuated strains of all three virus types. It is easily administered by health workers or volunteers, induces a good humoral (antibody) and mucosal (intestinal) immune response and is four times cheaper than inactivated poliovirus vaccine (IPV).</p> <p>OPV is the only vaccine of choice for poliomyelitis eradication because it achieves much better mucosal immunity than IPV while limiting dissemination of wild poliovirus in the community.</p> <p style="text-align: center;">Polio supplementary immunization activities (SIA) in Angola</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>SIA type</th> <th>Coverage (%)</th> </tr> </thead> <tbody> <tr><td rowspan="2">2004</td><td>National</td><td>99</td></tr> <tr><td>National</td><td>106</td></tr> <tr><td rowspan="2">2003</td><td>National</td><td>97</td></tr> <tr><td>National</td><td>101</td></tr> <tr><td rowspan="4">2002</td><td>Sub-national</td><td>103</td></tr> <tr><td>Sub-national</td><td>99</td></tr> <tr><td>National</td><td>109</td></tr> <tr><td>National</td><td>106</td></tr> <tr><td rowspan="4">2001</td><td>National</td><td>115</td></tr> <tr><td>Sub-national</td><td>No data</td></tr> <tr><td>Sub-national</td><td>No data</td></tr> <tr><td>National</td><td>96</td></tr> <tr><td rowspan="4">2000</td><td>National</td><td>96</td></tr> <tr><td>National</td><td>101</td></tr> <tr><td>Mop-up</td><td>No data</td></tr> <tr><td>National</td><td>81</td></tr> <tr><td rowspan="4">1999</td><td>National</td><td>88</td></tr> <tr><td>National</td><td>52</td></tr> <tr><td>Mop-up</td><td>No data</td></tr> <tr><td>National</td><td>95</td></tr> <tr><td rowspan="3">1998</td><td>National</td><td>99</td></tr> <tr><td>National</td><td>112</td></tr> <tr><td>National</td><td>91</td></tr> <tr><td rowspan="2">1997</td><td>National</td><td>107</td></tr> <tr><td>National</td><td>83</td></tr> <tr><td rowspan="3">1996</td><td>National</td><td>98</td></tr> <tr><td>National</td><td>71</td></tr> <tr><td>National</td><td>80</td></tr> </tbody> </table> <p>Data source: WHO/IVB database on supplementary immunization activities</p>	Year	SIA type	Coverage (%)	2004	National	99	National	106	2003	National	97	National	101	2002	Sub-national	103	Sub-national	99	National	109	National	106	2001	National	115	Sub-national	No data	Sub-national	No data	National	96	2000	National	96	National	101	Mop-up	No data	National	81	1999	National	88	National	52	Mop-up	No data	National	95	1998	National	99	National	112	National	91	1997	National	107	National	83	1996	National	98	National	71	National	80
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1996	National	98																																																																			
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	<p>Inactivated poliovirus vaccine (IPV): IPV can be given only by intramuscular injection and requires trained health workers. It elicits an excellent antibody response, but only minimal intestinal mucosal response; it is much more expensive than OPV. Angola has a routine immunization policy that requires three doses of OPV (see <i>Appendix 7</i> in this profile).</p> <p>However, supplementary immunization activities are also conducted in the country in order to increase immunization coverage as much as possible: these consist of national immunization days (NIDs), sub-NIDs (campaigns similar to NIDs but covering smaller areas), and mop-up campaigns, during which two OPV doses are given at an interval of 1 month to all children aged less than 5 years, preferably during the season of low transmission for enteroviruses (cooler season).</p> <p>In IDP and refugee camps, all children aged 0–59 months should be vaccinated on arrival.</p> <p>Every AFP case must be notified and investigated.</p>
<p>Epidemic control</p>	<p>Every country should have standard operating procedures in place to rapidly mount 'mop-up' campaigns upon confirming a polio case. Such plans are also a pre-requisite for polio-free certification.</p> <p>In case of suspected outbreak, undertake:</p> <p><u>Investigation</u></p> <ul style="list-style-type: none"> – Clinical and epidemiological investigation – Rapid virological investigation (2 stool samples within 14 days of onset of symptoms must be sent to a WHO-accredited laboratory). <p>Outbreak confirmation will be based on the isolation of wild poliovirus from a stool specimen obtained from an AFP case.</p> <p><u>Intervention</u></p> <p>House-to-house mop-up campaigns with OPV covering a wide geographical area (at least province involved and relevant neighbours) should be conducted within 4 weeks after confirmation of the wild poliovirus case if no NIDs or sub-NIDs are planned to cover the area within the next 3 months. Mop-up campaigns target a minimum of 500 000–1 million children.</p> <p>If NIDs/sub-NIDs are planned, a major quality focus should be set on the area of the outbreak and adjacent districts.</p> <p>Enhance surveillance through intensive monitoring of all reporting units, ensuring active surveillance and zero reporting, extensive retrospective record reviews, active case-finding in surrounding areas.</p>

20. RABIES

DESCRIPTION

Infectious agent	Rabies virus, a Rhabdovirus of the genus <i>Lyssavirus</i> .
Case definition	<p><u>Clinical description</u></p> <p>Paresis or paralysis, delirium, convulsions. Without medical attention, death in about 6 days, usually due to respiratory paralysis.</p> <p><u>Clinical case definition</u></p> <p>An acute neurological syndrome (encephalitis) dominated by forms of hyperactivity (furious rabies) or paralytic syndrome (dumb rabies) that progresses towards coma and death, usually by respiratory failure, within 7–10 days after the first symptom. Bites or scratches from a suspected animal can usually be traced in the patient's medical history.</p> <p><u>Laboratory criteria</u></p> <p>One or more of the following:</p> <ul style="list-style-type: none"> – Detection of rabies viral antigens by direct fluorescent antibody (FA) or by ELISA in clinical specimens, preferably brain tissue (collected post mortem) – Detection by FA on skin biopsy (collected ante mortem) – FA positive after inoculation of brain tissue, saliva or CSF in cell culture, or after intracerebral inoculation in mice or in suckling mice – Detectable rabies-neutralizing antibody titre in the serum or the CSF of an unvaccinated person – Detection of viral nucleic acids by PCR on tissue collected post mortem or in a clinical specimen (brain tissue or skin, cornea, urine or saliva) <p><u>Case classification</u></p> <p>Human rabies</p> <p>Suspected: A case that is compatible with the clinical case definition. Probable: A suspected case plus history of contact with a suspected rabid animal. Confirmed: A suspected case that is laboratory confirmed.</p> <p>Human exposure to rabies</p> <p>Possibly exposed: A person who had close contact (usually a bite or a scratch) with a rabies-susceptible animal in (or originating from) a rabies-infected area. Exposed: A person who had close contact (usually a bite or a scratch) with a laboratory-confirmed rabid animal.</p>
Mode of transmission	<p>Usually by the bite of an infected mammalian species (dog, cat, fox, bat): bites or scratches introduce virus-laden saliva into the human body.</p> <p>No human-to-human transmission has been documented.</p>
Incubation	The incubation period usually ranges from 2–10 days but may be longer (up to 7 years).
Period of communicability	In dogs and cats, usually for 3–7 days before onset of clinical signs (rarely over 4 days) and throughout the course of the disease. Longer periods of excretion before onset of clinical signs have been observed in other animal species.

EPIDEMIOLOGY

Burden	No data available.
Geographical distribution	No data available.
Seasonality	No seasonality reported.
Alert threshold	One case in a susceptible animal species and/or human must lead to an alert.
Recent epidemics	No data available.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	
Overcrowding	Yes	An infected animal has the opportunity to bite more people; dog population density parallels human population.
Poor access to health services	Yes	Prompt administration of vaccine post exposure (plus immunoglobulin if heavy exposure) is the only way to prevent death of an infected person.
Food shortages	No	
Lack of safe water and poor sanitation	No	
Others	Yes	Availability of food sources for dogs and susceptible wild animals increases their number. Children aged 5–15 years are the group at major risk.
Risk assessment conclusions		Risk of epidemics for humans is significant if cases of rabies are reported in dogs or other susceptible animals in the same zone.

PREVENTION AND CONTROL MEASURES

Case management	<p>There is no specific treatment for rabies, which is a fatal disease.</p> <p>The most effective way to prevent rabies is to wash and flush the wound or point of contact with soap and water, detergent or plain water, and then apply ethanol or tincture or aqueous solution of iodine.</p> <p>Anti-rabies vaccine should be given as soon as possible for Category II and III exposures, according to WHO-recognized regimens. Anti-rabies immunoglobulin should be applied for Category III exposures only.</p> <p>Suturing should be postponed; if it is necessary, immunoglobulin must first be applied. Where indicated, anti-tetanus treatment, antimicrobials and drugs should be administered to control infections other than rabies.</p>
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	Recommended treatments according to type of contact with suspect animal			
	Category	Type of contact with a suspect or confirmed rabid domestic or wild animal, or animal unavailable for testing	Type of exposure	Recommended treatment
	I	Touching or feeding of animals; Licks on intact skin	None	None, if reliable case history is available
	II	Nibbling of uncovered skin; Minor scratches or abrasions without bleeding	Minor exposure	Administer vaccine immediately Stop treatment if animal remains healthy throughout an observation period of 10 days or if animal is humanely killed and proven to be negative for rabies by a reliable laboratory using appropriate diagnostic techniques
	III	Single or multiple transdermal bites or scratches, licks on broken skin; Contamination of mucous membrane with saliva (i.e. licks); Exposures to bats	Severe exposure	Administer rabies immunoglobulin and vaccine immediately. Stop treatment if animal remains healthy throughout an observation period of 10 days or if animal is humanely killed and found to be negative for rabies using appropriate diagnostic techniques
	If a person develops the disease, death is inevitable. Universal barrier nursing practices are necessary for patients.			
Epidemic control	Immediate notification if one or more suspected cases are identified. Confirm the outbreak, following WHO guidelines. Confirm diagnosis and ensure prompt management.			
Prevention	WHO promotes human rabies prevention through: <ul style="list-style-type: none"> – well-targeted post-exposure treatment using modern vaccine types and, when appropriate, anti-rabies immunoglobulin; – increased availability of safe and effective rabies vaccine; – elimination of dog rabies through mass vaccination of dogs and dog population management. 			
Immunization	Mass preventive vaccination in humans is generally not recommended but can be considered under certain circumstances for the age group 5–15 years.			

21. SCHISTOSOMIASIS (bilharziasis)

DESCRIPTION

Infectious agent	<p>Helminths: <i>Schistosoma haematobium</i> (agent of urinary schistosomiasis); <i>Schistosoma mansoni</i> and <i>Schistosoma intercalatum</i> (agents of intestinal schistosomiasis). All are blood fluke worms belonging to the class Trematoda.</p> <p>Other <i>Schistosoma</i> species have not been reported in Angola.</p>
Case definition	<p><u>URINARY SCHISTOSOMIASIS</u></p> <p>ENDEMIC AREAS (MODERATE OR HIGH PREVALENCE) Suspected: Not applicable Probable: Not applicable Confirmed: A person with: — visible haematuria or — with positive reagent strip for haematuria or — with <i>S. haematobium</i> eggs in urine (microscopy).</p> <p>NON-ENDEMIC AREAS AND AREAS OF LOW PREVALENCE Suspected: A person with: — visible haematuria or — with positive reagent strip for haematuria and — possible contact with infective water. Probable: Not applicable. Confirmed: A person with <i>S. haematobium</i> eggs in urine (microscopy).</p> <p><u>INTESTINAL SCHISTOSOMIASIS</u></p> <p>ENDEMIC AREAS (MODERATE OR HIGH PREVALENCE) Suspected: A person with nonspecific abdominal symptoms, blood in stool, hepato(spleno)megaly. Probable: A person who meets the criteria for presumptive treatment, according to the locally-applicable diagnostic algorithms. Confirmed: A person with eggs of <i>S. mansoni</i> in stools (microscopy).</p> <p>NON-ENDEMIC AREAS AND AREAS OF LOW PREVALENCE Suspected: A person with nonspecific abdominal symptoms, blood in stool, hepatosplenomegaly and possible contact with infective water. Probable: Not applicable. Confirmed: A person with eggs of <i>S. mansoni</i> in stools (microscopy).</p>
Mode of transmission	<p><u>Water-based disease:</u></p> <p>Penetration of human skin by larval worms (cercariae) developed in snails after the eggs have been discharged in urine (<i>S. haematobium</i>) or faeces (<i>S. mansoni</i>, <i>S. haematobium</i>) into a body of fresh water by patients with chronic schistosomiasis. In the water, the eggs liberate the larvae that penetrate suitable fresh water snails, (<i>Bulinus globosus</i> and <i>Biomphalaria pfeifferi</i>), the intermediate hosts, to develop into larval worms (cercariae). The cercariae or schistosomes emerge from the snail and penetrate human skin usually while the person is swimming, working or wading in water (mainly among people engaged in agriculture and fishing).</p>
Incubation	<ul style="list-style-type: none"> – Within 4 days: localized dermatitis at the site of cercarial penetration. – Within 2–8 weeks: acute febrile reaction (Katayama fever; almost completely absent in <i>S. haematobium</i> infection). – From 3 months to several years: chronic illness manifestations.
Period of communicability	<p>As long as eggs are discharged by patients. This may be from 10–12 weeks to more than 10 years after infection.</p>

EPIDEMIOLOGY

Burden	<p>Luanda and Beng Province Survey</p> <p>Between September and October 2001 two surveys were carried out by the “Instituto Nacional de Saude Publica” in Luanda and Beng provinces with technical support from WHO. <i>S. haematobium</i> prevalence ranged from 6%–40% in different localities.</p> <p>Previous surveys showed <i>S. haematobium</i> infection was endemic in all 18 provinces of Angola. In 1987 <i>S. haematobium</i> was most predominant in the western part of the country (coastal areas). <i>S. mansoni</i> infection was endemic in 10 provinces of Angola in 1987, and is almost uniquely distributed in the eastern part of the country.</p> <p style="text-align: center;"><i>S. haematobium</i> prevalence of infection</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;">Locality</th> <th style="text-align: left;">Year</th> <th style="text-align: left;">Value (%)</th> </tr> </thead> <tbody> <tr> <td>Benguela</td> <td>1974</td> <td>93.40</td> </tr> <tr> <td>Huambo</td> <td>1975</td> <td>36.33</td> </tr> <tr> <td>Huila</td> <td>1974</td> <td>47.26</td> </tr> <tr> <td>Luanda</td> <td>1974</td> <td>74.10</td> </tr> <tr> <td>Malanje</td> <td>1988</td> <td>11.69</td> </tr> </tbody> </table> <p><i>S. mansoni</i> prevalence of infection:</p> <ul style="list-style-type: none"> • Luanda Province: 0% • Bié Province: 50–100% <p>Other provinces: no data available.</p> <p>Data sources:</p> <p>a) WHO global databank on schistosomiasis and soil-transmitted helminthiasis, 2004</p> <p>b) WHO Global Atlas on Schistosomiasis</p>	Locality	Year	Value (%)	Benguela	1974	93.40	Huambo	1975	36.33	Huila	1974	47.26	Luanda	1974	74.10	Malanje	1988	11.69
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Geographical distribution	<p>Urinary schistosomiasis has been reported throughout the greater part of Angola. In general, the prevalence rates have been above 25% on the Atlantic coast of Angola and below this level in the eastern two-thirds of the country. The highest burden has been reported (more than 50% of the individuals affected) in the coastal districts of Luanda-Bengo and Benguela, and also in the inland districts of Malange, Huila-Cunene.</p>																		



The most humid and the coolest regions would appear to be more susceptible to the spread of intestinal schistosomiasis, and arid areas to the spread of urinary schistosomiasis. The major foci of transmission are invariably in the savanna zone.

Seasonality	Dry periods tend to increase transmission of the disease as a result of higher cercarial densities in bodies of water and of drying of wells, with consequent increased use of unsafe water.
Recent epidemics in the country	Schistosomiasis is usually an endemic disease, with little likelihood of rapid changes in incidence. Surveys may identify areas of particularly high endemicity where mass treatment will be warranted.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Population displacement can lead to the introduction of <i>S. mansoni</i> and/or <i>S. haematobium</i> in areas previously free or endemic for only one of the species. <i>S. mansoni</i> was not present in Angola until 1950, when the first case of intestinal schistosomiasis was described in Malange Province. The disease was introduced in Angola from Democratic Republic of the Congo and Zambia, through the northern and eastern borders of the country. The penetration was sporadic in the beginning, but became consistent during the years of the Liberation war (1962–1975). By 1966 all the eastern boundaries of Angola had been declared endemic. The spreading of the disease within the country followed two routes: from east to west, and from north to south, especially with workers' migration related to contracts ("contratos") in coffee plantations.
Overcrowding	Yes	Higher human densities increase the chance of snails being penetrated and colonized by miracidia.
Poor access to	Yes	Regular treatment of cases has proved effective in reducing or preventing

health services		introduction of <i>Schistosoma</i> spp. into <i>Schistosoma</i> -free areas.
Food shortages	No	
Lack of safe water and poor sanitation	Yes	Use of surface water infested by cercariae and contamination of water by urination/defecation are essential for transmission of schistosomiasis.
Others	No	
Risk assessment conclusions		<p>No large-scale programmes are currently implemented in Angola. Case-management and control of schistosomiasis should be a priority intervention given the effect this disease plays on the general status of infested individuals as well as increasing the severity of concomitant infections.</p> <p>Praziquantel may be available on the local market; in this case the quality of the drug should be tested before being used in control programmes.</p>

PREVENTION AND CONTROL MEASURES

Case Management	<p>Praziquantel is the drug of choice against all schistosome parasites. A single oral dose of 40 mg/kg is generally sufficient to produce cure rates of between 80% and 90% and dramatic reductions in the average number of eggs excreted.</p> <p>Praziquantel treatment for one person requires, on average, 3 tablets of 600 mg in one dose. The cost of a tablet is now less than US\$ 0.10, bringing the total drug cost of a treatment to about US\$ 0.30. Drug costs decrease when the entire population is included in prevention programmes.</p> <p>A dose pole (dosage according to height) is available to facilitate the delivery of praziquantel in schools or for community-based delivery.</p>								
Prevention	<p>Community diagnosis (through primary school surveys) and regular treatment of individuals according to community prevalence categories (see below).</p> <p>Creation of alternative, safe water sources to reduce contact with infective water.</p> <p>Proper disposal of faeces and urine to prevent viable eggs from reaching bodies of water containing snail hosts.</p> <p>Health education to promote early care-seeking behaviour, use of safe water (if available) and proper disposal of excreta.</p> <p>Reduction of snail habitats and snail contact (through irrigation and agriculture practices), environmental management.</p> <p>Treatment of snail-breeding sites with molluscicide (if costs permit).</p> <table border="0"> <thead> <tr> <th>Community category</th> <th>Prevalence</th> </tr> </thead> <tbody> <tr> <td>I High prevalence</td> <td> ≥30% visible haematuria (<i>S. haematobium</i>, by questionnaire) OR ≥50% infected (<i>S. mansoni</i>, <i>S. haematobium</i>, by parasitological methods) </td> </tr> <tr> <td>II Moderate prevalence</td> <td> <30% visible haematuria (<i>S. haematobium</i>, by questionnaire) OR ≥10% but <50% infected (<i>S. mansoni</i>, <i>S. haematobium</i>, by parasitological methods) </td> </tr> <tr> <td>III Low prevalence</td> <td><10% infected (<i>S. haematobium</i>, <i>S. mansoni</i>, by parasitological methods)</td> </tr> </tbody> </table>	Community category	Prevalence	I High prevalence	≥30% visible haematuria (<i>S. haematobium</i> , by questionnaire) OR ≥50% infected (<i>S. mansoni</i> , <i>S. haematobium</i> , by parasitological methods)	II Moderate prevalence	<30% visible haematuria (<i>S. haematobium</i> , by questionnaire) OR ≥10% but <50% infected (<i>S. mansoni</i> , <i>S. haematobium</i> , by parasitological methods)	III Low prevalence	<10% infected (<i>S. haematobium</i> , <i>S. mansoni</i> , by parasitological methods)
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III Low prevalence	<10% infected (<i>S. haematobium</i> , <i>S. mansoni</i> , by parasitological methods)								

Category 1

Intervention in schools (enrolled and non-enrolled children):

Targeted treatment of school-age children, once a year.

Health services and community-based intervention:

Access to praziquantel for passive case treatment + community-directed treatment for high-risk groups* recommended.

*Such groups include preschool children, school-age children, pregnant women and workers with occupations involving contact with fresh water.

Category 2

Intervention in schools (enrolled and non-enrolled children):

Targeted treatment of school-age children, once every 2 years.

Health services and community-based intervention:

Access to praziquantel for passive case treatment.

Category 3

Intervention in schools (enrolled and non-enrolled children):

Targeted treatment of school-age children twice during primary schooling (once on entry, again on leaving).

Community-based intervention:

Access to praziquantel for passive case treatment.

For the definition of classes of intensity and further information, see: *Prevention and control of schistosomiasis and soil-transmitted helminthiasis*. Report of a WHO Expert Committee, Geneva, WHO, 2002 (WHO Technical Report Series No. 912); www.who.int/wormcontrol

22. SOIL-TRANSMITTED HELMINTHIASES (ascariasis, hookworm infection, trichuriasis)

DESCRIPTION

Infectious agent	Helminths: <i>Ascaris lumbricoides</i> , hookworm (<i>N. americanus</i>), <i>Trichuris trichiura</i> .
Case definition	<p>Ascariasis Suspected: Abdominal or respiratory symptoms and history of passing worms. Confirmed: Suspected case and passage of <i>A. lumbricoides</i> (anus, mouth, and nose), or presence of <i>A. lumbricoides</i> eggs in stools (microscopic examination).</p> <p>Hookworm infection Suspected: Severe anaemia for which there is no other obvious cause. Confirmed: Suspected case and presence of hookworm eggs in stools (microscopic examination).</p> <p>Trichuriasis Suspected: Bloody, mucoid stools. Confirmed: Suspected case and presence of <i>T. trichiura</i> eggs in stools.</p>
Mode of transmission	Ingestion of eggs, mainly as a contaminant of food: <i>A. lumbricoides</i> and <i>T. trichiura</i> . Active penetration of skin by larvae in the soil (hookworm).
Incubation	4–8 weeks for <i>A. lumbricoides</i> . From a few weeks to many months for hookworm disease. Unspecified for <i>T. trichiura</i> .
Period of communicability	<p><i>A. lumbricoides</i>: eggs appear in the faeces 45–75 days after ingestion and become infective in soil after 2–3 weeks. They can remain viable in soil for years. Infected people can contaminate soil as long as mature fertilized female worms live in the intestine (lifespan of adult worms can be 12–24 months).</p> <p>Hookworm: eggs appear in the faeces 6–7 weeks after infection. As larvae they become infective in soil after 7–10 days and can remain infective for several weeks. Infected people can contaminate soil for several years.</p> <p><i>T. trichiura</i>: eggs appear in the faeces 70–90 days after ingestion and become infective in soil after 10–14 days. Infected people can contaminate soil for several years.</p>

EPIDEMIOLOGY

Burden	<p>Luanda and Beng Province Survey Two surveys conducted in Luanda and Beng provinces in 2001 also examined STH infections in adults and school children and found:</p> <ul style="list-style-type: none"> – STH prevalence >30% – Aneamia prevalence (Hb <11g/dl) >48%. <p>A previous survey conducted in 1975 in Bie recorded a very prevalence.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Locality</th> <th style="text-align: left;">Year</th> <th style="text-align: left;">Value (%)</th> </tr> </thead> <tbody> <tr> <td>Bie</td> <td>1975</td> <td>99.3</td> </tr> <tr> <td>Other Provinces</td> <td colspan="2">no data available</td> </tr> </tbody> </table> <p>Data source: WHO global databank on schistosomiasis and soil-transmitted helminthiasis, 2004.</p>	Locality	Year	Value (%)	Bie	1975	99.3	Other Provinces	no data available	
Locality	Year	Value (%)								
Bie	1975	99.3								
Other Provinces	no data available									
Geographical distribution	Soil-transmitted helminthiasis (STH) are endemic in Luanda and Bié Provinces. No data are available for other provinces, but STH are likely to be widespread all over the country.									

Seasonality	The peak of transmission is usually at the end of the rainy season (north of the equator: October–November; south of the equator: March–April). The lowest transmission rate is at the end of the dry season (north of the equator: February–March; south of the equator: October–November).
Recent epidemics in the country	STH are usually endemic diseases, with little likelihood of rapid changes in incidence. Surveys may identify areas of particularly high endemicity where mass treatment will be warranted.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Strictly linked to insufficient sanitation resources. Not a risk factor if people remain in the same place for a period shorter than the time needed for eggs to be discharged by an infected patient and become infective themselves (at least 45–50 days).
Overcrowding	Yes	Linked to the number of people defecating and unsafe faeces disposal.
Poor access to health services	Yes	No treatment provided.
Food shortages	No	
Lack of safe water and poor sanitation	Yes	The ratio between number of people and available sanitation is the most important risk factor.
Others	No	
Risk assessment conclusions		<p>Control of helminthic infestations can play a major role in the reduction of the communicable disease burden borne by populations in complex emergency situations.</p> <p>STH can be controlled with low-cost, highly effective interventions that can remarkably increase the quality of life of affected populations.</p> <p>Moreover, given their simplicity and feasibility, intestinal helminth control activities can represent a starting point for the reconstruction of health-care systems in countries affected by complex emergencies.</p> <p>All STH compete with the host for nutrients, causing malabsorption of fats, proteins, carbohydrates and vitamins, and directly contributing to malnutrition. They can also cause growth retardation.</p> <p>A. lumbricoides infestation exacerbates vitamin A deficiency. Elimination of ascarids may result in rapid clinical improvement in night blindness and dryness around the eye.</p> <p>Hookworm infestation is strongly associated with chronic anaemia. Significant inverse correlations between intensity of worm infestation and haemoglobin level have been demonstrated.</p> <p>Heavy T. trichiura infestation may cause diarrhoea and severe malabsorption.</p> <p>Currently no large-scale programmes for the control of STH are implemented in Angola.</p> <p>As indicated above, STH can be controlled with very cheap interventions: the average cost of a school STH campaign (including drugs, distribution, and monitoring activities) is approximately US\$ 0.25 per child (less drug costs alone, about US\$.0.05 per child).</p>

PREVENTION AND CONTROL MEASURES

Case Management	<p>All STH compete with the host for nutrients, causing malabsorption of fats, proteins, carbohydrates and vitamins, and directly contributing to malnutrition. They can also cause growth retardation.</p> <p>A. lumbricoides infestation exacerbates vitamin A deficiency. Thus elimination of ascarids may result in rapid clinical improvement in night blindness and dryness around the eye. Infection from measles in a patient already infected with <i>A. lumbricoides</i> can result in a very severe disease.</p> <p>Hookworm infestation is strongly associated with chronic anaemia. Significant inverse correlations between intensity of worm infestation and haemoglobin level have been demonstrated.</p> <p>Heavy <i>T. trichuria</i> infection can cause diarrhoea and severe malabsorption.</p> <p>STH can be controlled with very cheap interventions. The average cost in a school distribution campaign (including drugs, distribution, and monitoring activities) is approximately US\$0.25 per child.</p> <p>For treatment, the following four drugs are recommended by WHO:</p> <ul style="list-style-type: none"> – 400 mg albendazole, or – 500 mg mebendazole, or – 2.5 mg/kg levamisole, or – 10 mg/kg pyrantel (less commonly used because it is less easy to administer) <p>Note 1: These drugs must not be given during the first trimester of pregnancy.</p> <p>Note 2: Where mass treatment with albendazole for filariasis is envisaged, chemotherapy of intestinal helminths will take place as part of the antifilarial chemoprophylaxis.</p> <p>Note 3: Iron supplementation is also recommended if required.</p>												
Prevention and control	<p>Overall:</p> <ul style="list-style-type: none"> • Personal hygiene, appropriate disposal of faeces, hand-washing, and clean food. • Improvements in sanitation standards (see Safe water and sanitation). • Community diagnosis (through primary-school surveys) and community-wide treatment regimen for STH according to the following categories: <p>Community diagnosis (through primary school surveys) and treatment regimen for STH:</p> <table border="1" data-bbox="435 1429 1444 1915"> <thead> <tr> <th>Community category</th> <th>Prevalence of any infection</th> <th>% of moderate-to-heavy intensity infections</th> </tr> </thead> <tbody> <tr> <td>I High prevalence, high intensity</td> <td>≥70%</td> <td>≥10%</td> </tr> <tr> <td>II High prevalence, low intensity</td> <td>≥50% but <70%</td> <td><10%</td> </tr> <tr> <td>III Low prevalence, low intensity</td> <td><50%</td> <td><10%</td> </tr> </tbody> </table>	Community category	Prevalence of any infection	% of moderate-to-heavy intensity infections	I High prevalence, high intensity	≥70%	≥10%	II High prevalence, low intensity	≥50% but <70%	<10%	III Low prevalence, low intensity	<50%	<10%
Community category	Prevalence of any infection	% of moderate-to-heavy intensity infections											
I High prevalence, high intensity	≥70%	≥10%											
II High prevalence, low intensity	≥50% but <70%	<10%											
III Low prevalence, low intensity	<50%	<10%											

	<p><u>Category 1</u></p> <p>Intervention in schools (enrolled and non-enrolled children): Targeted treatment of school-age children, 2–3 times a year.</p> <p>Health services and community-based intervention: Systematic treatment of preschool children and women of childbearing age in mother-and-child health programmes.</p> <p><u>Category 2</u></p> <p>Intervention in schools (enrolled and non-enrolled children): Targeted treatment of school-age children, once a year.</p> <p>Health services and community-based intervention: Systematic treatment of preschool children and women of childbearing age in mother-and-child health programmes</p> <p><u>Category 3</u></p> <p>Intervention in schools (enrolled and non-enrolled children): Selective treatment.</p> <p>Community based intervention: Selective treatment.</p> <p>For the definition of classes of intensity and further information, see: <i>Prevention and control of schistosomiasis and soil-transmitted helminthiasis. Report of a WHO Expert Committee.</i> Geneva, WHO, 2002 (WHO Technical Report Series, No. 912).</p> <p><u>In case of suspected or confirmed hookworm infection</u></p> <ul style="list-style-type: none"> – In highly endemic areas, wear shoes. – Consider drug treatment and iron supplementation in pregnancy.
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23. TUBERCULOSIS

DESCRIPTION

Infectious agent	Bacterium: <i>Mycobacterium tuberculosis</i> . This complex includes <i>M. tuberculosis</i> and <i>M. africanum</i> primarily from humans, and <i>M. bovis</i> primarily from cattle.
Case definition	<p><u>Clinical description</u></p> <p>The most important symptoms in the selection of tuberculosis (TB) suspects are the following:</p> <ul style="list-style-type: none"> – productive cough >2 weeks (<i>or in accordance to current Angola National Tuberculosis Control Programme recommendation</i>), and/or – haemoptysis and – significant weight loss. <p>Patients with TB may also have other symptoms (which are more common, but less suggestive) such as:</p> <ul style="list-style-type: none"> – chest pain – breathlessness – fever/night sweats – tiredness, and – loss of appetite. <p><u>In camp settings:</u> It is the priority of the health services to detect the sources of infection by sputum microscopy, and cure them. It is not usual to have ready access to X-ray facilities in camp settings.</p> <p><u>Clinical case definition</u></p> <p>Tuberculosis suspect Any person who presents with symptoms or signs suggestive of TB, in particular cough of long duration (more than 2 weeks or <i>in accordance to current Angola National Tuberculosis Control Programme recommendation</i>).</p> <p>Case of tuberculosis* A patient in whom TB has been bacteriologically confirmed or diagnosed by a clinician.</p> <p style="padding-left: 40px;">Note: Any person given treatment for tuberculosis should be recorded as a case. Incomplete "trial" tuberculosis treatment should not be given as a method for diagnosis.</p> <p>Definite case of tuberculosis* A patient who is culture positive for the <i>Mycobacterium tuberculosis</i> complex. (In countries where culture is not routinely available, a patient with two sputum smears positive for acid-fast bacilli (AFB) is also considered a "definite" case.)</p> <p><small>*Revised international definitions in tuberculosis control. The International Journal of Tuberculosis and Lung Disease 5(3): 213 – 215.</small></p> <p><u>Laboratory criteria for diagnosis</u></p> <p>Each TB suspect should have three sputum samples examined by light binocular microscopy for AFB.</p> <p>Secretions build up in the airways overnight; an early morning sputum sample is therefore more likely to contain the TB organism than a sample later in the day. In practice a suspect provides sputum samples in the following manner:</p> <p>Day 1 Sample 1 – Person suspected of TB provides an "on-the-spot" sample under supervision on presentation to the health facility. He or she is given a sputum container to take home for an early morning sample the following morning.</p>

Day 2

Sample 2 – Person suspected of TB brings an early morning sputum sample collected just after waking up.

Sample 3 – Person suspected of TB provides another “on-the-spot” sample when he or she is handing in sample 2.

If at least two sputum smears are positive

Smears should be stained using the Ziehl–Neelsen method. Any TB suspect with two positive smears is a smear-positive TB patient, who must then be registered and started on anti-TB treatment.

When all three sputum smears are negative

If the initial three smears are negative, but pulmonary TB is still suspected because of persistent symptoms, the suspect should be treated for acute respiratory infection with broad-spectrum antibiotics (e.g. amoxicillin or co-trimoxazole, **but not rifampicin or any anti-TB drug**) for at least 1 week. If there is no improvement, their sputum must be re-examined 2 weeks after the first sputum examination.

Between 65% and 80% of all pulmonary TB cases are expected to be confirmed by positive sputum smear examination. X-ray lesions compatible with active TB should encourage further sputum examination if the three sputum smear examinations were negative. X-ray itself is not diagnostic tool for pulmonary TB.

In *some* circumstances, a compatible X-ray together with symptoms consistent with TB will lead to the diagnosis of pulmonary TB in smear-negative cases. Thus, if all three samples are again negative after the trial of antibiotics, either a compatible X-ray interpreted by an experienced physician or, in the absence of X-ray facilities, the experienced physician’s judgement alone will decide whether someone is categorized as having TB (classed as smear-negative TB).

Additional cases of TB may be found among close contacts of known smear-positive cases, either family members or persons sleeping in the same shelter. Symptomatic contacts should be screened, using the procedures described above.

TB in HIV-positive patients

HIV-positive patients with TB infection have a much higher risk of developing active TB than HIV-negative patients. In HIV-infected patients, pulmonary TB is still the commonest form of TB. The clinical presentation of TB depends on the degree of immunosuppression.

The principles of TB control are the same even when there are many HIV/TB patients.

It is important to look systematically for symptoms or signs of TB in HIV-positive patients and to start treatment without delay based on bacteriological, radiological and clinical evidence.

HIV testing should be promoted among TB patients. HIV-positive TB patients should be provided with co-trimoxazole preventive therapy (CPT).

Whenever possible, eligible HIV positive TB patients should be provided with antiretroviral (ARV) therapy.

<p>Diagnostic criteria for classification of TB in adults</p>	<p><u>Pulmonary tuberculosis (pulmonary TB)</u> This refers to disease involving the lung parenchyma. Tuberculous intrathoracic lymphadenopathy (mediastinal and/or hilar) or tuberculous pleural effusion without lung involvement, therefore constitutes a case of extrapulmonary TB. A patient with both pulmonary and extrapulmonary TB should be classified as a case of pulmonary TB.</p> <ul style="list-style-type: none"> • Smear-positive pulmonary TB <p>Either:</p> <p>A patient with at least two sputum specimens positive for AFB by microscopy; or:</p> <p>A patient with at least one sputum specimen positive for AFB by microscopy and radiographic abnormalities consistent with pulmonary TB; or:</p> <p>A patient with at least one sputum specimen positive for AFB by microscopy, which is culture-positive for <i>M. tuberculosis</i>.</p> <ul style="list-style-type: none"> • Smear-negative pulmonary TB <p>Case of pulmonary TB that does not meet the above definition for smear-positive TB.</p> <p>This group includes cases without smear result, which should be exceptional in adults but relatively more frequent in children. The following criteria should be used to establish the diagnosis of smear-negative pulmonary TB:</p> <ul style="list-style-type: none"> – at least three sputum specimens negative for AFB, and – no clinical response to a one-week course of broad-spectrum antibiotics, and – radiographic abnormalities consistent with active pulmonary TB, and – decision by a clinician to treat with a full course of antituberculosis chemotherapy. <p>A patient whose initial sputum smears were negative and whose subsequent sputum culture result is positive is also considered to have smear-negative pulmonary TB.</p> <p><u>Extrapulmonary tuberculosis (EPTB)</u> This refers to tuberculosis of organs other than the lungs, e.g. pleura, lymph nodes, abdomen, genitourinary tract, skin, joints and bones, meninges. Diagnosis should be based on culture-positive specimens, or histological or strong clinical evidence consistent with active EPTB, followed by a medical decision by a clinician to treat with a full course of antituberculosis chemotherapy.</p> <p>The case definition of an EPTB case with several sites affected depends on the site representing the most severe form of disease.</p> <p>Some cases will be easy to diagnose such as; peripheral lymphadenitis, with swelling of cervical or axial lymph nodes, chronic evolution and/or production of caseous discharge. Other cases, such as severe, life-threatening forms (e.g. miliary TB, TB meningitis), TB of bone or joints, TB peritonitis, TB laryngitis), will be suspected but should be referred to a hospital for assessment.</p>
<p>Mode of transmission</p>	<p>Exposure to tubercle bacilli in airborne droplet nuclei produced by people with pulmonary or laryngeal tuberculosis during expiratory efforts, such as coughing and sneezing. EPTB (other than laryngeal) is usually non-infectious.</p> <p>Bovine tuberculosis results from exposure to tuberculous cattle, usually by ingestion of unpasteurized milk or dairy products.</p>

Progression to active disease	<p>Progression to active disease can take from weeks to years; latent infections may persist throughout life. The risk of TB occurrence is relatively high during the first year following TB infection then progressively decreases by half within the following 4–5 years.</p> <p>Only ≤10% of infected people with a normal immune system will develop clinically-evident TB at some point in life.</p>
Period of communicability	As long as viable tubercle bacilli are being discharged in the sputum. Effective treatment usually eliminates communicability within 8 weeks.

EPIDEMIOLOGY

Burden	TB cases reported in Angola				
	Year	Number of TB cases notified	Case notification rates per 100 000	Number of new smear-positive cases	Rate of new smear-positive cases per 100 000
	2003	36 079	265	18 971	139
	2002	29 996	228	18 087	137
	2001	21 713	170	11 923	93
	2000	16 062	130	9 053	73
	1999	14 235	118	7 379	61
	1998	14 296	122	7 333	62
	1997	15 066	138	8 246	72
	1996	15 454	47	8 016	72
	1995	5 143	68	1 839	35
	1994	7 157	81	1 618	41
	1993	8 269	114	1 653	48
	1992	11 272	116	-	-
	1991	11 134	110	-	-
	1990	10 271	105	-	-
	1989	958	92	-	-
	1988	8 184	98	-	-
	1987	8 510	110	-	-
	1986	9 363	104	-	-
	1985	8 653	104	-	-
	1984	10 153	126	-	-
	1983	6 625	85	-	-

(Data source: WHO/Global Tuberculosis Control. WHO Report 2005)

Estimated burden of TB (and HIV) cases and deaths in Angola, 1990–2003

	Indicator	2003	1990
Deaths	^a Number of all cases excl HIV+	2 699	4 802
	Rate of all cases excl HIV+	20	51
	^b Number of all cases incl HIV+	3 446	5 520
	Rate of all cases incl HIV+	25	59
Prevalence	Number of all cases excl HIV+	34 835	41 603
	Rate of all cases excl HIV+	256	445
	Number of all cases incl HIV+	36 997	42 306
	Rate of all cases incl HIV+	272	453
Incidence	Number of new SS+ incl HIV+	15 454	8 636
	Rate of new SS+ incl HIV+	113	92
	Number of all cases incl HIV+	35 236	19 729
	Rate of all cases incl HIV+	259	211

Note:

^a “excl HIV+” means excluding HIV+ TB cases.

^b “incl HIV+” means including HIV and TB cases.

SS+, sputum-smear positive

The age and sex distribution of smear-positive cases in DOTS* areas, 2003 (absolute numbers) is summarized below:

Age group (yr)	Male	Female	All
0–14	380	551	931
15–24	2 282	2 983	5 265
25–34	2 484	2 525	5 009
35–44	1 841	1 660	3 501
45–54	1 018	1 111	2 129
55–64	483	374	857
>65	344	128	472

*DOTS, directly observed treatment, short course

Data source: WHO Global Tuberculosis Control Report, 2005

(WHO/WHO TB Report 2005: WHO/CDS/TB/2005.349)

Geographical distribution

Even if specific data are not available, TB is estimated to be widespread in the country.

Seasonality	No specific seasonality is reported.
Alert threshold	Not applicable.
Recent epidemics in the country	Not applicable.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Population displacement disrupts existing TB control programmes. This leads to an increased risk of transmission since TB cases that potentially can spread the disease will not be identified and therefore not treated. The proportion of treatment failures is also likely to increase as a result of interruption of TB therapy and contribute to the emergence of drug-resistant strains.																																																
Overcrowding	Yes	Overcrowding is recognized as one of the most important factors leading to increased risk of transmission.																																																
Poor access to health services	Yes	<p>People affected by TB who cannot access health services and be treated remain infectious for a longer period.</p> <p>Treatment outcomes for new smear-positive pulmonary TB in Angola show a high default rate (20%), while the treatment rate is still lower than the global target (85%). (Latest data available for 2002).</p> <table border="1"> <thead> <tr> <th>DOTS monitoring indicator</th> <th>Smear-positive new cases, DOTS</th> <th>Non-DOTS</th> <th>New smear-positive retreatment cases, DOTS</th> </tr> </thead> <tbody> <tr> <td>Number of cases notified</td> <td>17 345</td> <td>742</td> <td>2 320</td> </tr> <tr> <td>Number of cases registered</td> <td>17 345</td> <td>No data available</td> <td></td> </tr> <tr> <td>% of notified registered</td> <td>100</td> <td>No data available</td> <td></td> </tr> <tr> <td>% cured</td> <td>65</td> <td>No data available</td> <td>40</td> </tr> <tr> <td>% completed treatment</td> <td>9</td> <td>No data available</td> <td>11</td> </tr> <tr> <td>died %</td> <td>3</td> <td>No data available</td> <td>No data available</td> </tr> <tr> <td>failed %</td> <td>1</td> <td>No data available</td> <td>No data available</td> </tr> <tr> <td>default%</td> <td>20</td> <td>No data available</td> <td>20</td> </tr> <tr> <td>% transferred</td> <td>2</td> <td>No data available</td> <td>No data available</td> </tr> <tr> <td>% not evaluated</td> <td>No data available</td> <td>No data available</td> <td>29</td> </tr> <tr> <td>% success</td> <td>74</td> <td>No data available</td> <td>51</td> </tr> </tbody> </table> <p>(Data source: WHO/TB control report, 2005)</p> <p>The case-fatality rate is high (about 50%) without proper treatment. The interruption of treatment is one of the most important causes of development of multi-drug resistant TB (MDR-TB).</p>	DOTS monitoring indicator	Smear-positive new cases, DOTS	Non-DOTS	New smear-positive retreatment cases, DOTS	Number of cases notified	17 345	742	2 320	Number of cases registered	17 345	No data available		% of notified registered	100	No data available		% cured	65	No data available	40	% completed treatment	9	No data available	11	died %	3	No data available	No data available	failed %	1	No data available	No data available	default%	20	No data available	20	% transferred	2	No data available	No data available	% not evaluated	No data available	No data available	29	% success	74	No data available	51
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failed %	1	No data available	No data available																																															
default%	20	No data available	20																																															
% transferred	2	No data available	No data available																																															
% not evaluated	No data available	No data available	29																																															
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Food shortages	Yes	Tuberculosis, often in combination with HIV/AIDS, is common in malnourished populations. The consequent immune system dysfunction can both enhance susceptibility to tuberculosis infection and the progression of disease. Malnourished populations, especially malnourished children of all ages, are considered to be at particular risk of developing severe active tuberculosis.																																																

Lack of safe water and poor sanitation	No																			
Others	Yes	<ul style="list-style-type: none"> • HIV is the most powerful factor known in increasing the risk of developing active TB among people infected with tubercle bacilli. • Low BCG vaccination coverage among children less than 1 year of age. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Year</th> <th style="text-align: center;">Coverage (%)</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">2004</td><td style="text-align: center;">72</td></tr> <tr><td style="text-align: center;">2003</td><td style="text-align: center;">62</td></tr> <tr><td style="text-align: center;">2002</td><td style="text-align: center;">82</td></tr> <tr><td style="text-align: center;">2001</td><td style="text-align: center;">75</td></tr> <tr><td style="text-align: center;">2000</td><td style="text-align: center;">56</td></tr> <tr><td style="text-align: center;">1999</td><td style="text-align: center;">52</td></tr> <tr><td style="text-align: center;">1990</td><td style="text-align: center;">48</td></tr> <tr><td style="text-align: center;">1980</td><td style="text-align: center;">no data available</td></tr> </tbody> </table> <p style="text-align: center;">(Data source: WHO/IVB/VAM data, 2005)</p>	Year	Coverage (%)	2004	72	2003	62	2002	82	2001	75	2000	56	1999	52	1990	48	1980	no data available
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1990	48																			
1980	no data available																			
Risk assessment conclusions	<p>Various factors present challenges for successful TB control in Angola.</p> <ul style="list-style-type: none"> • War, political instability and jeopardizing of territorial control have caused destruction of health infrastructure, resulting in low coverage of primary health care and staff capacity. • About 25.9% of adult (15–49 years) TB cases are estimated to have HIV infection (UN AIDS 2004 update). • Poor nutritional status of a large part of the population is increasing vulnerability to development of active disease. • BCG coverage among children aged <1 year is 72% (WHO/UNICEF estimates, 2004) and presently remains below the minimum WHO recommended standard (>80%). • Collaboration between national TB and HIV/AIDS programmes is weak. <p>National TB programme performance indicators have gradually improved in recent years. The WHO recommended DOTS strategy has registered the following achievements nationally:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;">Case detection and treatment outcomes</th> <th style="text-align: center;">2003</th> <th style="text-align: center;">2002</th> <th style="text-align: center;">2001</th> <th style="text-align: center;">2000</th> <th style="text-align: center;">1999</th> <th style="text-align: center;">1998</th> <th style="text-align: center;">1987</th> <th style="text-align: center;">1996</th> </tr> </thead> <tbody> <tr> <td style="text-align: left;">DOTS new smear-positive case treatment success rate (%)</td> <td style="text-align: center;">74</td> <td style="text-align: center;">66</td> <td style="text-align: center;">68</td> <td style="text-align: center;">15</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> </tr> </tbody> </table> <p style="text-align: center;">(Data source: WHO/Global TB report, 2005)</p>	Case detection and treatment outcomes	2003	2002	2001	2000	1999	1998	1987	1996	DOTS new smear-positive case treatment success rate (%)	74	66	68	15	-	-	-	-	
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PREVENTION AND CONTROL MEASURES

Case Management	<p>Once the diagnosis of TB has been made and before treatment starts, all patients must be questioned carefully as to whether or not they have ever taken anti-TB drugs before. Patients should be classified according to the following criteria:</p> <ul style="list-style-type: none"> – site of disease – severity of the disease – bacteriological status (assessed by sputum microscopy) – history of anti-TB treatment (new or previously treated). <p><u>New case</u></p> <p>A patient who has never had treatment for TB or who has taken anti-TB drugs for less than 4 weeks and has:</p> <ul style="list-style-type: none"> – sputum smear-positive pulmonary TB or – sputum smear-negative pulmonary TB, or extrapulmonary TB. <p><u>Previously-treated case</u></p> <p>A patient who has at any time received anti-TB treatment for more than 1 month. This group of patients comprises:</p> <ul style="list-style-type: none"> – Return after interruption: common among recent refugees or internally displaced persons. – Failure: a patient who, while on treatment, remained, or became again, smear-positive, 5 months or later after starting treatment; also, a patient who was smear-negative before starting treatment and became smear-positive after the second month of treatment, or a patient who is started on a re-treatment regimen after having failed previous treatment. – Relapse: a patient previously treated for TB who has been declared cured or treatment completed, and is diagnosed with bacteriologically-positive (smear or culture) tuberculosis. – Chronic: a patient who remained, or became again, smear-positive at the end of a fully supervised, standardized re-treatment regimen. <p>Good case management includes directly observed therapy during the intensive phase for all new sputum-smear positive cases, the continuation phase of rifampicin-containing regimens and the entire re-treatment regimen.</p> <p>There are three main types of regimens: Category I for new smear-positive (infectious) pulmonary cases, Category II for re-treatment cases, and Category III for smear-negative pulmonary or extrapulmonary cases (see Treatment categories below).</p> <p>The chemotherapeutic regimens are based on standardized combinations of five essential anti-TB drugs:</p> <ul style="list-style-type: none"> – rifampicin (R) – isoniazid (H) – pyrazinamide (P) – ethambutol (E), and – streptomycin (S)* <p>Each of the standardized chemotherapeutic regimens consists of two phases:</p> <p>1. Initial (intensive) phase</p> <ul style="list-style-type: none"> – 2–3 months, with 3–5 drugs given daily under direct observation, for maximum reduction in the number of TB organisms. – The number of drugs used relates to the risk of failure of treatment due to bacterial resistance.
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	<p>2. Continuation phase</p> <ul style="list-style-type: none"> – 4–6 months, with 2–3 drugs given three times a week under direct observation, or in some cases (e.g. during repatriation of refugees), two drugs for 6 months given daily unsupervised, but in a fixed-dose combination form*. <ul style="list-style-type: none"> • All doses of rifampicin-containing regimens are observed by staff. • Actual swallowing of medication must be checked. • Hospitalized patients should be kept in a separate ward for the first two weeks of treatment. <p>* Regimens are written in short form with the number of months the medication is to be given in front of the letter and the doses per week written after the letter. If there is no number after the letter, a daily dosage is given. The symbol “ / “ separates the different phases of the therapy, e.g. 2 RHZE/4 H3R3 means that for the first 2 months of treatment, rifampicin, isoniazid, pyrazinamide and ethambutol are given daily. This is followed by 4 months of rifampicin and isoniazid given regularly but each given only 3 times per week.</p> <p><u>HIV-positive patients**</u></p> <ol style="list-style-type: none"> 1. Anti-TB drug treatment is the same for HIV-positive and HIV-negative patients, with one exception: <u>do not give thioacetazone to HIV-positive TB patients</u> as there is increased risk of severe and sometimes fatal skin reactions. 2. Controlled clinical trial studies have shown that isoniazid preventive treatment (IPT) reduces the risk of TB disease in HIV-positive individuals with latent TB infection (shown by a positive tuberculin skin test). 3. The use of IPT has shown to be more effective than other regimens used for prevention of latent TB infection. 4. The decision to use IPT must be carefully evaluated, and firstly requires exclusion of active tuberculosis in the patient. 5. To effectively manage the problem of the HIV-TB coinfection, TB and HIV programmes should coordinate activities through a TB/HIV coordinating body (See: WHO/TB-HIV interim policy on collaborative TB/HIV activities. WHO/HTM/TB/2004.330, WHO/HTM/HIV/2004.1 http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.330.pdf). <p>** Additionally, please consult Angola national tuberculosis control programme (NTP) guidelines.</p>
<p>Treatment* categories</p>	<p>Standardized short-course chemotherapy using regimens of 6–8 months</p> <p><u>Category I: EHRZ/RH</u></p> <p>These patients are:</p> <ul style="list-style-type: none"> – New smear-positive TB cases – Severely ill patients with other forms of TB (new smear-negative pulmonary TB with extensive parenchymal involvement, and new cases of severe forms of extrapulmonary TB¹). <p>The recommended regimen is for 6 months. The initial (intensive) phase of treatment lasts for 2 months, where rifampicin, isoniazid, pyrazinamide and ethambutol are given daily or 3 times a week, under direct supervision.</p> <p>At the end of the second month, most patients will have a negative result on sputum microscopy; they can then progress to the second stage of treatment – the continuation phase. This phase lasts for 4 months, with rifampicin and isoniazid given three times per week, under direct supervision.²</p> <p>For whatever reason, if the sputum smear examination is positive at the end of the second month, the initial phase is prolonged for a third month. The patient then starts the continuation phase irrespective of the results of the sputum examination at the end of the third month. If the sputum smears are still positive at the end of the fifth month or at the end of the treatment regimen, the patient is classified a treatment failure case. The patient is re-registered, and commences a full course of the re-treatment regimen as a Category II patient.</p>

<p>** Additionally, please consult Angola national tuberculosis control programme (NTP) guidelines.</p>	<p>Drug dose is adjusted for weight gain at the end of the initial phase (2nd or 3rd month).</p> <p>¹This category includes patients with TB meningitis, disseminated TB, pericarditis, peritonitis, bilateral or extensive pleurisy, vertebral disease with neurological complications, and intestinal and genitourinary disease.</p> <p>²Daily self-administered ethambutol and isoniazid may be used in the continuation phase for 6 months, so this treatment regimen takes a total of 8 months. However, note that there is a higher rate of treatment failure and relapse associated with this practice.</p>
	<p><u>Category II: 2SHRZE/1HRZE/5HRE</u></p> <p>Patients who were previously treated and are now sputum smear positive include:</p> <ul style="list-style-type: none"> – treatment after interruption; – treatment failure; and – relapse after treatment. <p>These patients should receive a standardized re-treatment regimen, fully supervised throughout both phases of treatment.</p> <p>The initial phase of treatment lasts for 3 months, where rifampicin, isoniazid, pyrazinamide and ethambutol are given daily. This regimen is supplemented by streptomycin daily for the first 2 months.</p> <p>The continuation phase of this regimen is followed by 5 months of rifampicin, isoniazid and ethambutol given 3 times per week.</p> <p>Sputum smear examination is performed at the end of the initial phase of treatment (at the end of three months), during the continuation phase of treatment (at the end of the fifth month) and at the end of treatment (at the end of the eighth month). If the patient is sputum smear-positive at the end of the third month, the initial phase of treatment is extended with isoniazid, rifampicin, ethambutol and pyrazinamide for 1 more month. Patients who are still positive at the end of the fourth month, progress to the continuation phase, regardless of the results of the sputum examination.</p> <p><u>Category III</u></p> <p>These patients include:</p> <ul style="list-style-type: none"> – smear-negative pulmonary patients (with limited parenchymal involvement) – non-serious extrapulmonary disease in adults and children (including symptomatic primary disease). <p>All Category III patients should receive 2 months of rifampicin, isoniazid and pyrazinamide daily, followed by 4 months of alternate-day isoniazid and rifampicin.</p> <p>For all patients, when the continuation phase cannot be carried out under direct observation, daily ethambutol and isoniazid should be used in the continuation phase for 6 months. All doses of rifampicin-containing regimens should be observed by staff. Actual swallowing of medication should be checked.</p> <p>See:</p> <p>Treatment of tuberculosis: guidelines for national programmes, 3rd ed. Geneva, WHO, 2003 (WHO/TB/2003.313)</p> <p>Tuberculosis control in refugee situations: an inter-agency field manual. Geneva, WHO, 1997 (WHO/TB/97.221, being updated)</p> <p>An expanded DOTS framework for effective tuberculosis control. Geneva, WHO 2002 (WHO/CDS/TB/2002.297)</p>

<p>Health education</p>	<p>Key elements of community education:</p> <ul style="list-style-type: none"> – avoid stigmatization of TB patients – TB disease is curable – early (self) referral of TB suspects – importance of adherence to treatment – contact tracing. <p>The most important messages to teach:</p> <ul style="list-style-type: none"> – TB in adults should be suspected when the person has a productive cough lasting more than 3 weeks, and/or blood in the sputum, with significant weight loss. – Cover the mouth whenever coughing or sneezing to prevent the spread of lung diseases. – Anyone may contract TB. – TB is curable. – Early treatment is important for best results and to prevent spread, especially to family members. – Children are especially at risk if not treated and may develop severe, even fatal disease. – Appropriate treatment is the best prevention. – All patients must take the full course of treatment. – Treatment makes patients non-infectious in 8 weeks, but cure takes 6–8 months. – Treatment must be completed even though the patient may feel better sooner. – Failure to complete the treatment may result in a recurrence, which may be impossible to treat and spread serious disease to others, especially to children. – All patients should be treated sympathetically and with respect. – Controlling TB is a community responsibility. <p>Note: Diagrams should be used as much as possible, a high literacy should not be assumed. Cured patients are often helpful teachers and supporters of new patients.</p>
<p>Prevention</p>	<p>Detection and treatment of smear -positive (infectious) TB cases is the most effective intervention to prevent the transmission of TB.</p> <p>Complementary control strategies:</p> <ul style="list-style-type: none"> – Health education to improve and strengthen adherence to treatment. – Maintaining good ventilation and reducing overcrowding in health clinics, and ensuring hospitalized patients are kept in a separate ward for the first 2 weeks of treatment. – Particular care must be made to separate infectious TB patients from HIV-positive individuals. – BCG has been shown to be effective in preventing severe forms of TB such as meningitis in children (see below). – Isoniazid prophylaxis is not recommended in complex emergency situations, except for children being breastfed by smear-positive mothers. If the child is well, BCG vaccination should be postponed and isoniazid should be given to the child for 6 months. In the event of a sudden disruption to the programme, isoniazid may be stopped, and BCG should be given before the child leaves the programme (preferably after a 1-week interval).
<p>Immunization</p>	<p>BCG has been shown to be effective in preventing severe forms of disease such as TB meningitis and miliary TB in children. As overcrowding and malnutrition are common in many refugee and displaced populations, the risk of TB transmission to children is increased.</p>

	<p>BCG is strongly recommended for all newborn children and any children up to the age of 5 years who have not already received it.</p> <p>The vaccination of newborns should be incorporated into routine immunization programmes for all children. Re-vaccination is not recommended.</p>
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MANAGEMENT OF TB IN REFUGEE AND STABLE DISPLACED POPULATIONS – CHILDREN

<p>Diagnosis of TB in children</p>	<p>TB in children is a general disease, which may affect any part of the body. Children rarely have smear-positive TB, so they are rarely infectious. In complex emergency situations with a large number of children, extrapulmonary forms of TB should be suspected, diagnosed and treated appropriately. Often, this requires referral to a hospital for X-ray and special examinations (e.g. lumbar puncture).</p> <p>Children with headache, change of temperament, recent squint or ocular muscle paralysis or dyspnoea should be suspected of meningitis. TB is one, although rare, cause of meningitis (meningococcal meningitis is a more common cause in complex emergency settings).</p> <p>Definitive diagnosis requires hospital referral.</p> <p>Children with high fevers, dyspnoea, gastrointestinal symptoms, confusion (i.e. those with suspicion of acute miliary tuberculosis) must also be referred to hospital for assessment and diagnosis.</p> <p>Suspected TB bone and tuberculous arthrosis or pleural effusions also require referral.</p> <p>Commoner forms of extrapulmonary disease can be diagnosed and treated in a camp situation (e.g. cervical or axillary lymphadenitis, peritonitis with ascites).</p> <p>The diagnosis of TB in children should be carefully considered in a child if there is:</p> <ul style="list-style-type: none"> – an illness lasting for more than 10 days – a history of close contact with a TB patient – a poor response to antibiotic therapy – a poor response to one month of nutritional rehabilitation – weight loss or abnormally slow growth – loss of energy, or – increasing irritability and drowsiness over 2 weeks. <p>Note: The same considerations explained above in adults, apply in children for the <u>diagnosis of TB in HIV-positive patients</u>.</p>
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24. TYPHOID FEVER

DESCRIPTION

Infectious agent	Bacterium: <i>Salmonella typhi</i> (new nomenclature: <i>Salmonella enterica</i> serovar Typhi, S. Typhi).
Case definition	<p>Suspected case (clinical case definition): Clinical diagnosis is difficult. In absence of laboratory confirmation, any case with fever of at least 38 °C for 3 or more days is considered suspect if the epidemiological context is conducive.</p> <p>Confirmed case: A suspected case with isolation of S. Typhi from blood or stool cultures.</p> <p>Carriers: S. Typhi organisms persisting in stools or urine for >1 year after onset of the disease.</p>
Mode of transmission	<p>Faecal–oral route, particularly ingestion of food and water contaminated by faeces and urine of patients and carriers.</p> <p>Faecal carriage occurs in about 2% of infected adults. Patients with concurrent <i>Schistosoma haematobium</i> infection are at higher risk of becoming urinary carriers of S. Typhi.</p>
Incubation	Incubation period is usually 8–14 days but may be from 3 days up to 1 month.
Period of communicability	From the symptomatic period for 2 weeks; 2–5% of infected cases remain carriers for several months. Chronic carriers are greatly involved in spread of the disease.

EPIDEMIOLOGY

Burden	No data available.
Geographical distribution	No data available.
Seasonality	No data available.
Alert threshold	Two or more linked cases.
Recent epidemics in the country	No data available.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Dissemination of multi-drug resistant strains of S. Typhi.
Overcrowding	Yes	Very important.
Poor access to health services	Yes	Early detection and containment of the cases are paramount to reduce dissemination. Case-fatality rate is high (10–20%) in absence of a proper treatment.
Food shortages	No	
Lack of safe water and poor sanitation	Yes	The most important risk factor.
Others	Yes	Multidrug-resistant strains of S. Typhi, including resistance to ciprofloxacin. Milk and dairy products are an important source of infection.

Risk assessment conclusions	In the general population the risk is related to the availability of safe food and water. The disease causes epidemics particularly in complex emergency settings where the above risk factors are present. Rapid diagnosis, antibiotic susceptibility testing, appropriate case management and institution of control measures are key factors in reducing mortality.
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PREVENTION AND CONTROL MEASURES

Case management	<p>Early antimicrobial treatment, selected according to the antimicrobial resistance pattern of the strain.</p> <p>Quinolones (e.g. ciprofloxacin), co-trimoxazole, chloramphenicol and ampicillin are usually used for typhoid fever.</p> <p>Dehydration prevention and case management using Oral Rehydration Salt (ORS) therapy also plays an important role.</p>
Epidemic control	<p>Epidemics often occur as point-source epidemics, from healthy carriers to food (including use of contaminated utensils). Outbreaks may occur through person-to-person contamination (faecal–oral transmission via contaminated hands or instruments). Direct faecal contamination of untreated water supplies may cause extensive outbreaks.</p> <p>Investigations must pinpoint the source and mode of infection to identify control measures (chlorination/boiling of water, selective elimination of suspect food).</p> <p>Inform the health authorities if one or more suspected cases are identified.</p> <p>Confirm the outbreak, following WHO guidelines.</p> <p>Confirm the diagnosis and ensure prompt treatment.</p>
Prevention	<p>See</p> <ul style="list-style-type: none"> – "Prevention" in <i>Diarrhoeal diseases</i> (others) – Appendix 3: <i>Safe water and sanitation</i>.
Immunization	<p>Mass immunization may be an adjunct for the control of typhoid fever during a sustained, high-incidence epidemic. This is especially true when access to well-functioning medical services is not possible or in the case of a multidrug-resistant strain.</p> <p>A parenteral vaccine containing the polysaccharide Vi antigen is the vaccine of choice among displaced populations. An oral, live vaccine using <i>S. Typhi</i> strain Ty21a is also available.</p> <p>Neither the polysaccharide vaccine nor the Ty21a vaccine is licensed for children aged less than 2 years. The Ty21a vaccine should not be used in patients receiving antibiotics.</p> <p>See:</p> <p>Background document: The diagnosis, treatment and prevention of typhoid fever. World Health Organization. Geneva. 2003. WHO/V&B/03.07 http://www.who.int/vaccine_research/documents/en/typhoid_diagnosis.pdf</p>

25. YELLOW FEVER

DESCRIPTION

Infectious agent	Yellow fever virus, belonging to Flavivirus group.
Case definition	<p><u>Clinical description</u></p> <p>Characterized by acute onset of fever followed by jaundice within 2 weeks of onset of first symptoms. Haemorrhagic manifestations and signs of renal failure may occur.</p> <p>There are two disease phases of yellow fever:</p> <p>Acute phase While some infected people have no symptoms at all, this first phase is normally characterized by fever, muscle pain (with prominent backache), headache, shivers, loss of appetite, nausea and/or vomiting. Often, the high fever is paradoxically associated with a slow pulse (Faget's sign). Most patients improve after 3–4 days and their symptoms disappear, but 15% enter the toxic phase.</p> <p>Toxic phase Fever reappears, the patient rapidly develops jaundice and complains of abdominal pain with vomiting. Bleeding can occur from mouth, nose, eyes and/or stomach. Once this happens, blood appears in the vomit and faeces. Kidney function deteriorates; this can range from abnormal protein levels in the urine (albuminuria) to complete renal failure with no urine production (anuria). Half the patients in the toxic phase die within 10–14 days. The remainder recover without significant organ damage.</p> <p><u>Laboratory criteria</u></p> <p>Isolation of yellow fever virus, or Presence of yellow fever specific IgM or a 4-fold or greater rise in serum IgG levels in paired sera (acute and convalescent), or Positive post-mortem liver histopathology, or Detection of yellow fever antigen in tissues by immunohistochemistry, or Detection of yellow fever virus genomic sequences in blood or organs by polymerase chain reaction (PCR).</p> <p><u>Case classification</u></p> <p>Suspected: a case that is compatible with the clinical description Probable: not applicable Confirmed: a suspected case that is laboratory confirmed (national reference laboratory) or epidemiologically linked to a confirmed case or outbreak.</p>
Mode of transmission	<p>Bite of infective mosquitoes.</p> <p>The vectors of yellow fever in forest areas in Africa are <i>Aedes africanus</i> and other <i>Aedes</i> species. In urban areas, the vector is <i>Aedes aegypti</i> (all-day biting species).</p>
Incubation	From 3 to 6 days.
Period of communicability	<p>Blood of patients is infective for mosquitoes shortly before onset of fever and for the first 3–5 days of illness.</p> <p>The disease is highly communicable where many susceptible people and abundant vector mosquitoes coexist; not communicable by contact or common vehicles. Once infected, mosquitoes remain so for life.</p>

EPIDEMIOLOGY

Burden	Angola is not among the high risk areas for yellow fever epidemics. However, 37 cases were reported to WHO in 1988. No other cases have been reported since then.
Geographical distribution	
Seasonality	In forest areas, where the yellow fever virus circulates between mosquitoes and monkeys or chimpanzees, the disease is continuously present throughout the year. In field or savannah areas outside the forest areas, the virus remains dormant in the infected mosquito eggs throughout the dry season and emerges in the rainy season when eggs hatch.
Alert threshold	One confirmed case must lead to an alert. An outbreak of yellow fever is at least one confirmed case.
Recent epidemics in the country	The last outbreak of yellow fever occurred in Luanda in 1988 (37 cases and 14 deaths, CFR 37%). Previous cases were reported in 1971 (65 cases, 42 deaths, CFR 64%).

RISK FACTORS FOR INCREASED BURDEN

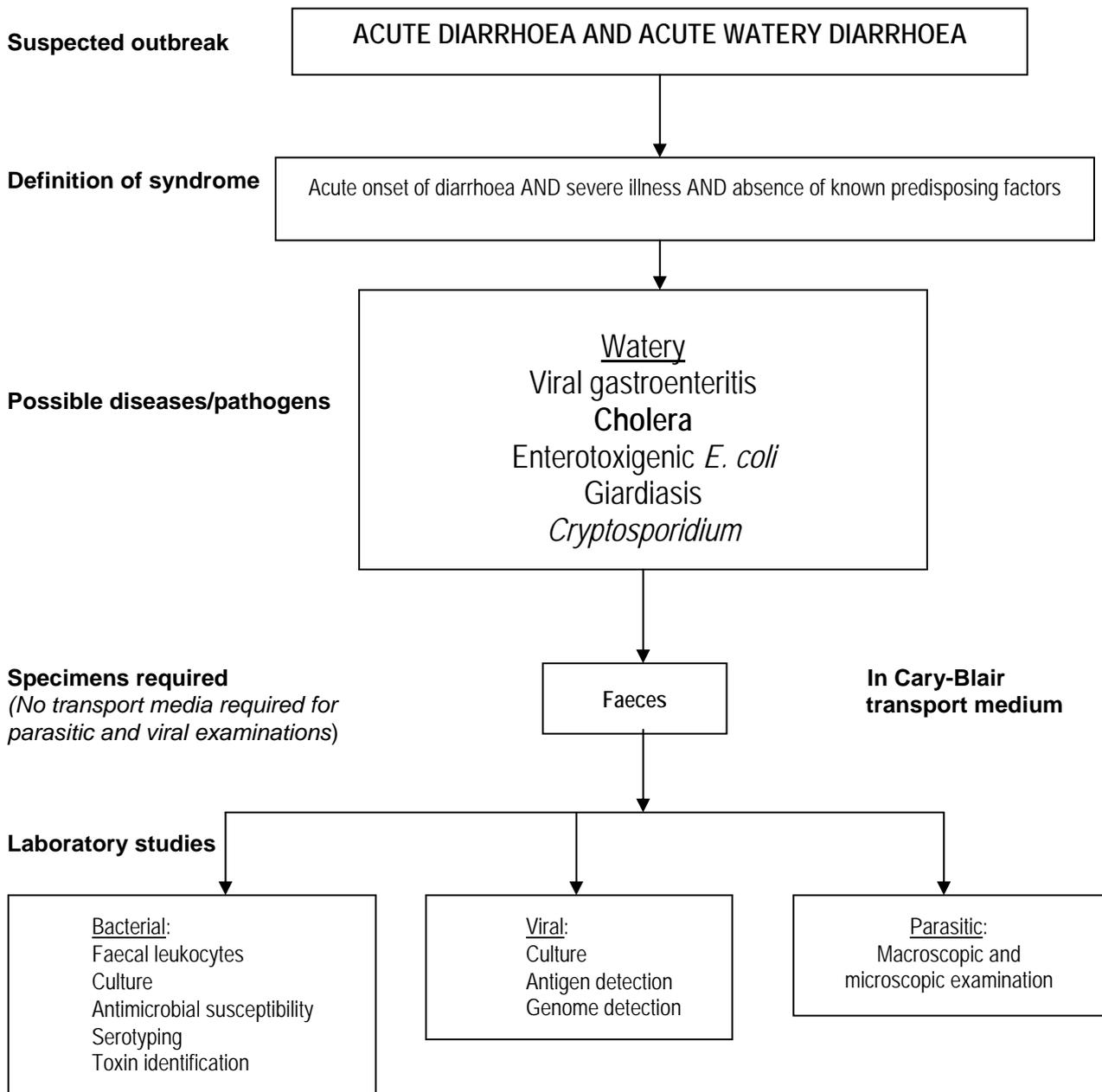
Population movement	Yes	Unvaccinated people moving to areas of endemicity are at risk. Changes in land use constitute a risk factor.
Overcrowding	Yes	As a result of increased population density and increased exposure to mosquito bites in temporary shelters.
Poor access to health services	Yes	Collapse of vaccination programmes. Increased death rates due lack of appropriate case management.
Food shortages	No	
Lack of safe water and poor sanitation	No	
Others	Yes	Open water storage provides favorable habitat for <i>Aedes aegypti</i> . Old tyres, old water containers, etc. increase vector breeding. Temporary surface-water bodies (poor drainage leading to pools and open channels of water) may increase vector breeding opportunities.

Risk assessment conclusions	<p>Although no cases have been reported officially from the country since 1988, the environmental conditions suitable for yellow fever transmission still exist.</p> <p>Reduced vaccination coverage rates for yellow fever and abandonment of mosquito-control programmes are likely to have increased this risk. Moreover, the movement of people from rural to urban areas has resulted in large numbers of people living in conditions of poverty, crowded housing and poor sanitation, all conditions that amplify the risk of transmission.</p> <p>The precise extent of illness and death due to yellow fever is not known.</p> <p>Disease surveillance is not adequate to detect cases of sylvatic yellow fever that can occur in remote areas. Moreover, an outbreak of yellow fever may go undetected because the signs and symptoms of yellow fever have a wide spectrum and overlap with many other diseases, and it is difficult for health workers to make a definitive diagnosis based on the signs and symptoms alone. Mild cases can go undetected because the patient is likely to be treated at home and does not seek care in a health facility.</p> <p>Vaccine coverage for infants aged <1 year in recent years is under 50%.</p>
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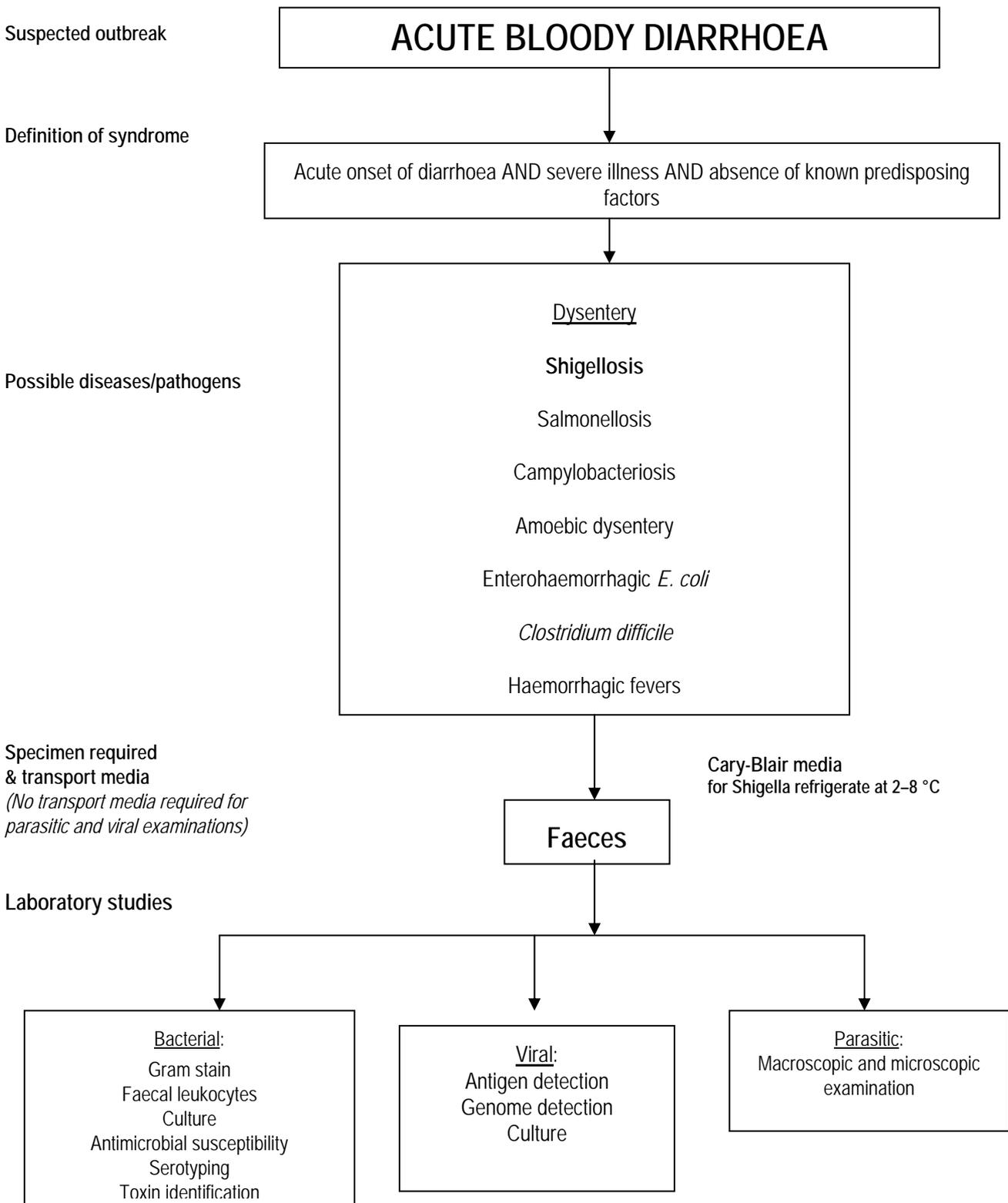
PREVENTION AND CONTROL MEASURES

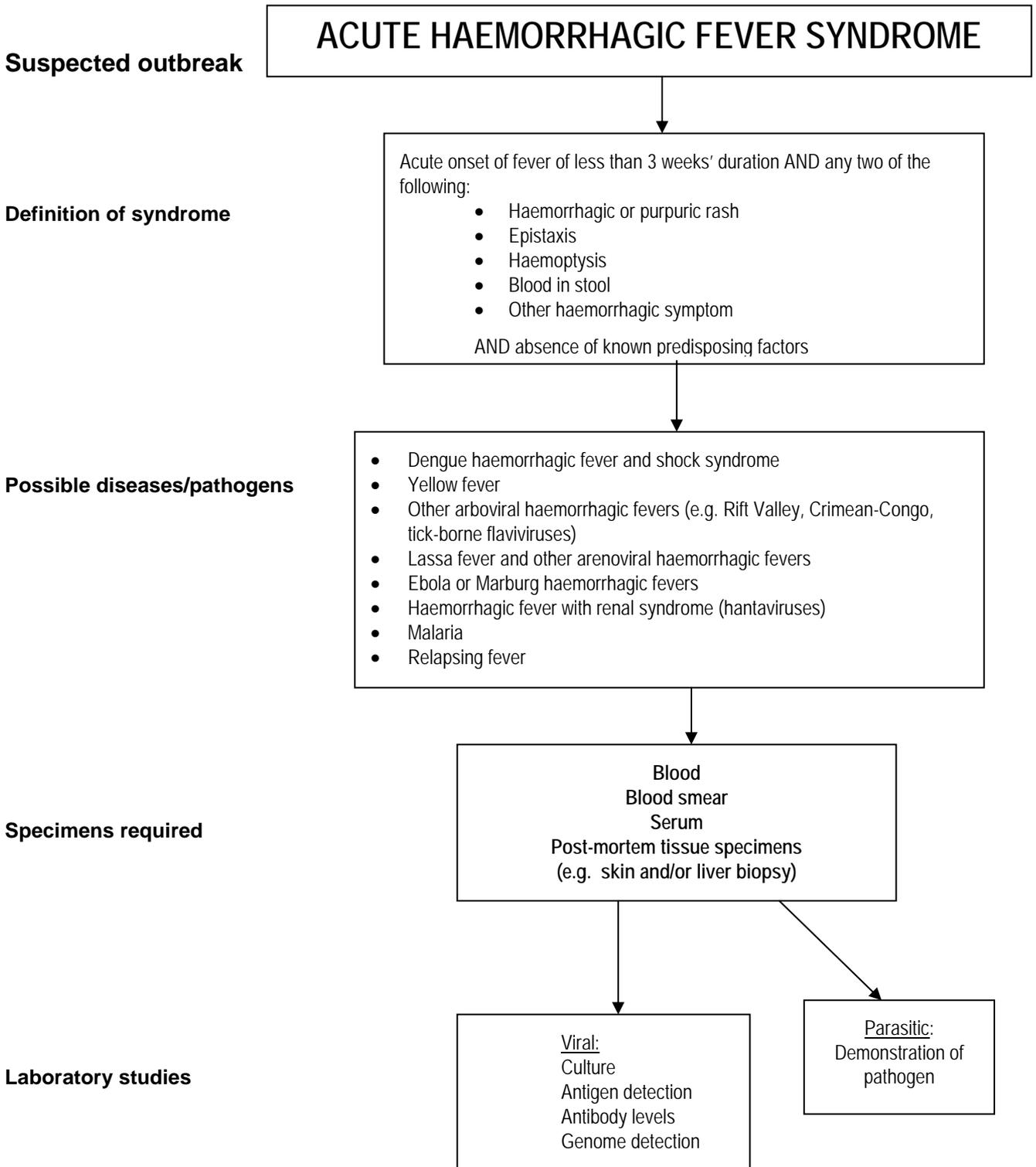
Case management	<p>No specific treatment for yellow fever is available.</p> <p>Dehydration and fever can be corrected with oral rehydration salts.</p> <p>Intensive supportive care may improve the outcome but is rarely available.</p>
Epidemic control	<p>An infected mosquito spreads yellow fever when it bites non-infected humans. When human-to-human transmission is established, the conditions for an epidemic are in place. Depending on the travel patterns of infected humans or infected mosquitoes, the epidemic spreads from village to village and into cities.</p> <p>Under epidemic conditions, the following must be implemented:</p> <ul style="list-style-type: none"> – Mass vaccination with yellow fever vaccine – Emergency mosquito control measures: <ul style="list-style-type: none"> • eliminating potential mosquito breeding sites (the most important mosquito control measure for yellow fever control) • spraying to kill adult mosquitoes (less important because of small impact) • use of insecticide-treated bednets.
Prevention	<p>Vaccination is the single most important measure for preventing yellow fever</p> <ul style="list-style-type: none"> – In endemic areas, vaccination must be given routinely through the incorporation of yellow fever vaccine in routine child immunization programmes and mass preventive campaigns. Yellow fever vaccine is not recommended for symptomatic HIV-infected persons or other immuno-suppressed individuals; for theoretical reasons, it is not recommended for pregnant women. – Recommended strategies: vaccinating the population aged over 9 months in districts where coverage is less than 80%; if funds are limited, a lower cost intervention would be to vaccinate children aged between 9 months and 14 years to reach at least 50% of the population; yellow fever vaccination should be integrated in routine EPI activities. <p>Routine mosquito control measures</p> <ul style="list-style-type: none"> – Eliminating potential mosquito breeding sites.

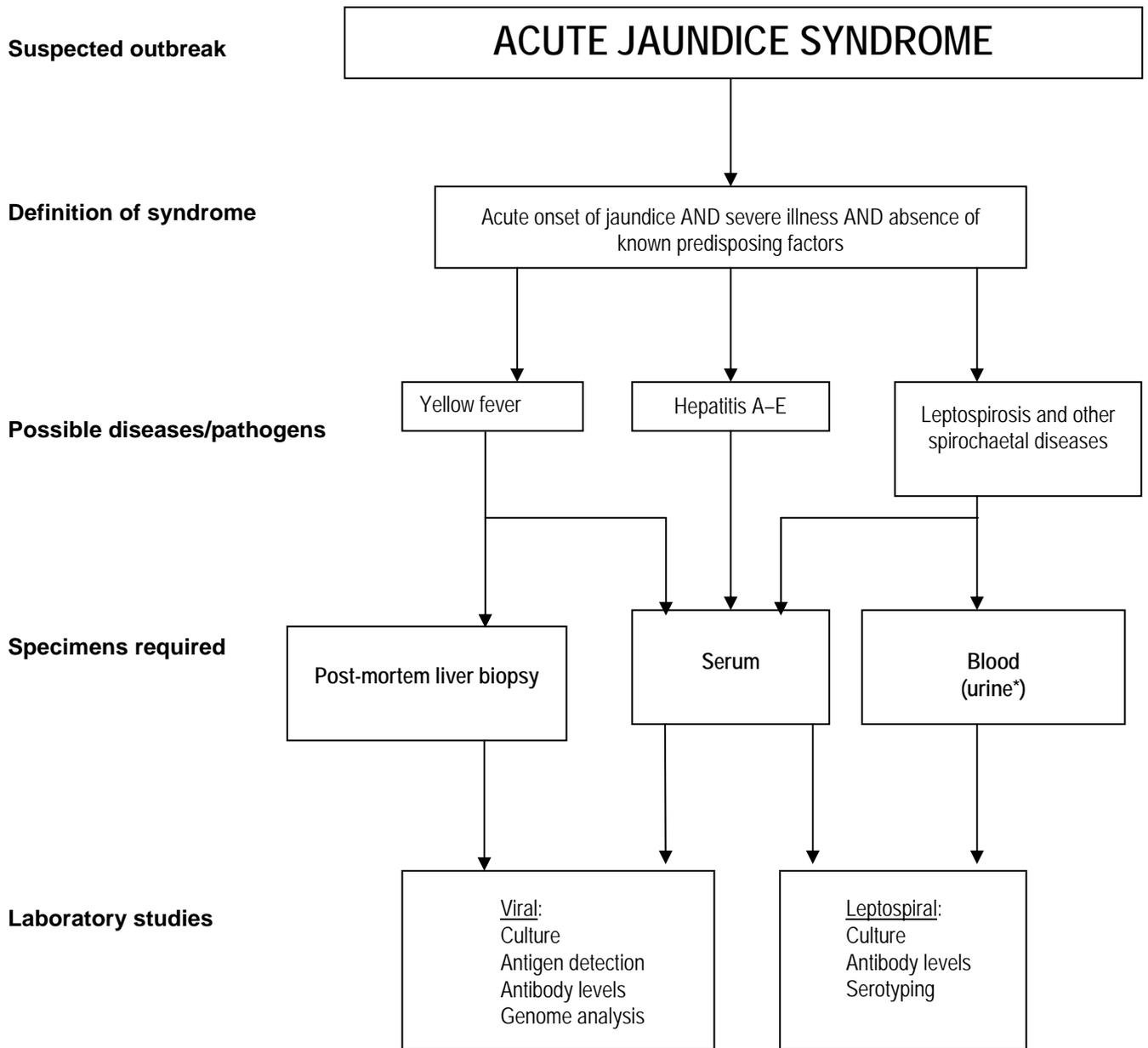
APPENDIX 1: Flowcharts for the diagnosis of communicable diseases



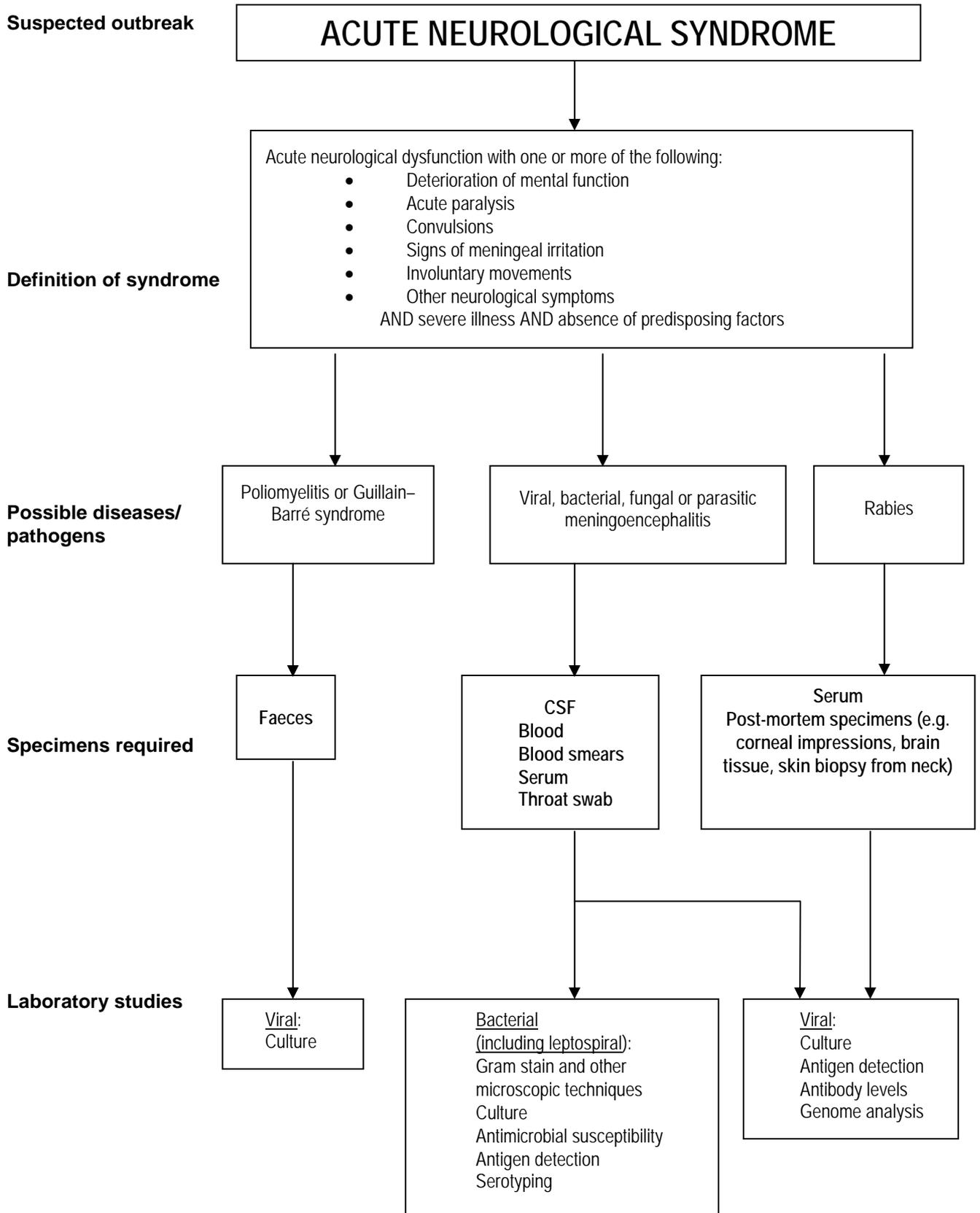
Ebola and other haemorrhagic fevers may initially present as bloody diarrhoea. If such an etiology is suspected, refer to "Acute Haemorrhagic Fever Syndrome" for appropriate specimen collection guidelines.

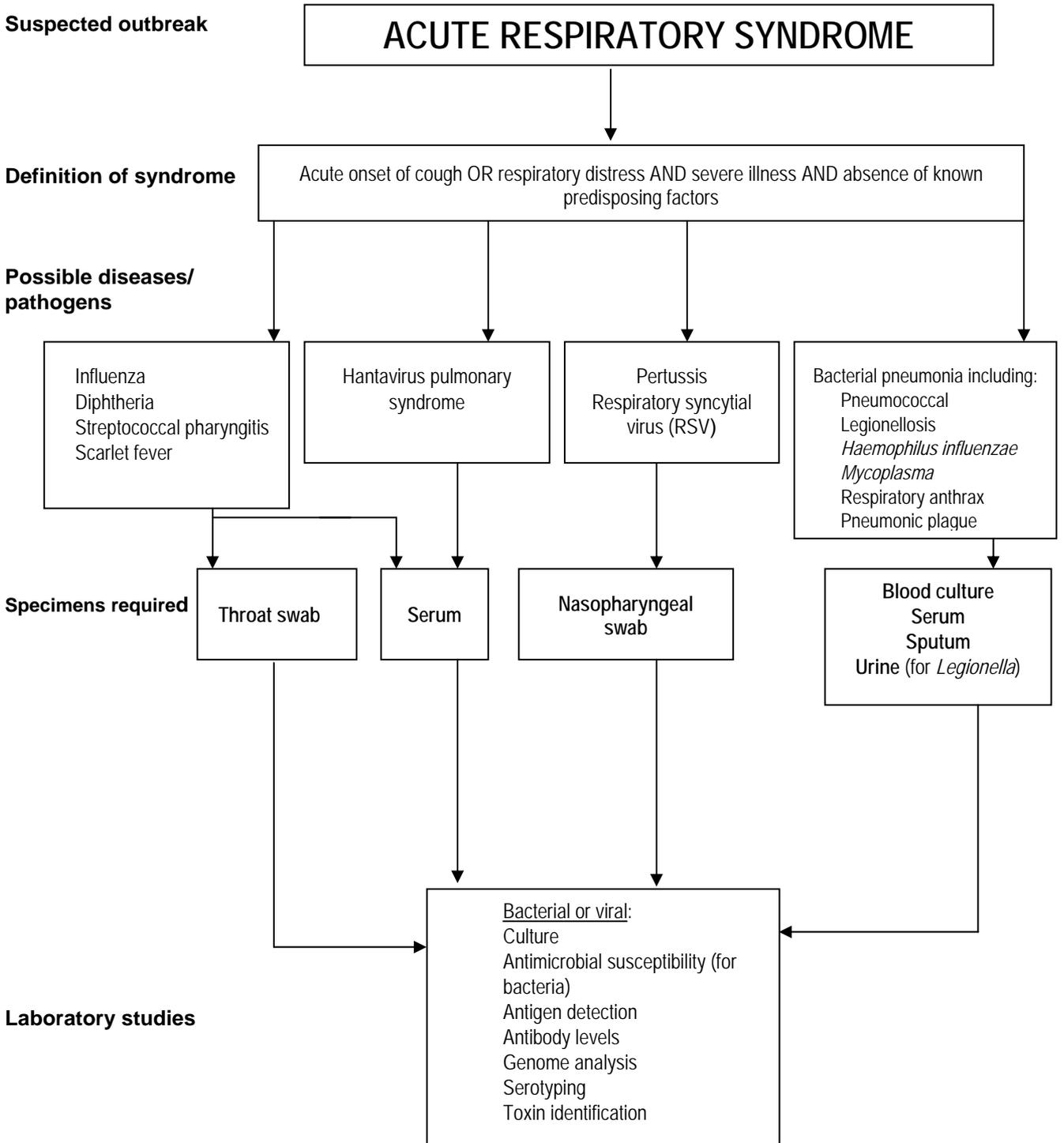






* Requires specialized media and handling procedures.





Adapted from: *Guidelines for the collection of clinical specimens during field investigation of outbreaks*. Geneva, WHO, 2000 (WHO/CDS/CSR/EDC/2000.4)

APPENDIX 2: Steps in outbreak management

• PREPARATION

- Health coordination meetings
- Surveillance system – weekly health reports to WHO
- Stockpiles – specimen kits, appropriate antibiotics, IV fluids
- Epidemic investigation kits
- Contingency plans for isolation wards in hospitals
- Laboratory support

• DETECTION

If a certain number of cases of any of the following diseases/syndromes is diagnosed (i.e. alert threshold is passed):

- Acute watery diarrhoea in over 5-year-olds
- Bloody diarrhoea
- Suspected cholera
- Measles
- Meningitis
- Acute haemorrhagic fever syndrome
- Acute jaundice syndrome
- Suspected polio (acute flaccid paralysis)
- Cluster of deaths of unknown origin
- (diseases/syndromes in list to be modified according to country profile)

inform your health coordinator as soon as possible. The health coordinator should inform the Ministry of Health and Sanitation and WHO.

• RESPONSE

Confirmation

- The lead health agency should investigate reported cases to confirm the outbreak situation – number of cases higher than that expected for the same period of year and population. Clinical specimens will be sent for testing.
- The lead health agency should activate an outbreak control team with membership from relevant organizations: Ministry of Health, WHO and other United Nations Organizations, nongovernmental organizations in the fields of health and water and sanitation, veterinary experts.

Investigation

- Confirm diagnosis (laboratory testing of samples)
- Define outbreak case definition
- Count number of cases and determine size of population (to calculate attack rate)
- Collect/analyse descriptive data to date (e.g. time/date of onset, place/location of cases and individual characteristics such as age/sex)
- Follow up cases and contacts
- Determine the at-risk population
- Formulate hypothesis for pathogen/source/transmission
- Conduct further investigation/epidemiological studies (e.g. to clarify mode of transmission, carrier, infectious dose required, better definition of risk factors for disease and at-risk groups)
- Write an investigation report (investigation results and recommendations for action).

Control

- Implement control measures specific for the disease and prevent exposure (e.g. isolation of cases in viral haemorrhagic fever outbreak)
- Prevent infection (e.g. immunization in measles outbreak)
- Treat cases with recommended treatment as in WHO guidelines.

• EVALUATION

- Assess timeliness of outbreak detection and response, cost
- Change public health policy if indicated (e.g. preparedness)
- Write outbreak report and disseminate.

APPENDIX 3: Safe water and sanitation

The following are effective methods to obtain safe drinking-water:

Boiling

To make water safe for drinking and hygiene purposes, bring water to a vigorous, rolling boil and keep it boiling for 1 minute. This will kill, or inactivate, most of the organisms that cause diarrhoea.

Household filtration

Household filtration should considerably reduce the pathogens in the water. It should be followed by disinfection through chlorination or boiling.

Disinfection through chlorination

The following guidelines should be translated into messages that take into account locally-available products and measuring devices. To make water safe by chlorination, the first step is to make a stock solution of chlorine.

A stock solution can be prepared by adding the following products to one litre of water:

Product (% concentration by weight of available chlorine)	Amount for 1 litre
Calcium hypochlorite (70%); or	15 g
Bleaching powder or chlorinated lime (30%); or	33 g
Sodium hypochlorite (5%); or	250 ml
Sodium hypochlorite (10%)	110 ml

The stock solution must be stored in a closed container, in a cool dark place and used within one month. It should be used to prepare safe water as follows:

Stock solution	Added volume of water
0.6 ml or 3 drops	1 litre
6 ml	10 litres
60 ml	100 litres

Mix by stirring and allow the chlorinated water to stand for at least 30 minutes before using it. The free residual chlorine level after 30 minutes should be between 0.1 and 0.5 mg/litre. If the free residual chlorine is not within this range, the number of drops of the stock solution should be adjusted so the final product falls within this range.

If the water is cloudy or turbid it must either be filtered before chlorination or boiled vigorously rather than chlorinated. Chlorination of turbid water might not make it safe.

Sanitation

Good sanitation can markedly reduce the risk of transmission of intestinal pathogens, especially where its absence may lead to contamination of clean water sources. High priority should be given to observing the basic principles of sanitary human waste disposal, as well as to ensuring the availability of safe water supplies.

Appropriate facilities for human waste disposal are a basic need of all communities; in the absence of such facilities there is a high risk of water-related diseases. Sanitary systems that are appropriate for the local conditions should be constructed with the cooperation of the community.

People will need to be taught how to use latrines, about the dangers of defecating on the ground, or in or near water, and about the importance of thorough hand-washing with soap or ash after any contact with excreta. The disposal of children's excreta in latrines needs to be emphasized.

See: Franceys R, Pickford J, Reed R. *A guide to the development of on-site sanitation*. Geneva, WHO, 1992.

Environmental health in emergencies and disasters: a practical guide

http://www.who.int/water_sanitation_health/hygiene/emergencies/emergencies2002/en/

- Fact sheets on environmental sanitation WHO/EOS/96.4

http://www.who.int/water_sanitation_health/hygiene/emergencies/envsanfactsheets/en/

APPENDIX 4: Injection safety

Analysis of data collected as part of the Comparative Risk Assessment component of the Global Burden of Disease study suggests that the WHO African Region, which includes the Democratic Republic of the Congo, faces substantial challenges in terms of unsafe injection practices and transmission of bloodborne pathogens through injections. In this region, the proportion of new infections with hepatitis B, hepatitis C and HIV that are attributable to unsafe injection practices are 10.9%, 16.4% and 2.5%, respectively. Thus, in all relief efforts to assist the population and the displaced populations in this region of the world, safe and appropriate use of injections should be ensured through the following actions:

PATIENTS:

- State a preference for oral medications when visiting health-care facilities.
- Demand a new, single-use syringe for every injection.

HEALTH WORKERS:

- Avoid prescribing injectable medication whenever possible.
- Use new, single-use syringe for every injection.
- Do not recap syringes and immediately discard them in a sharps box to prevent needle-stick injury
- Dispose of full sharps boxes by open-air incineration and burial.

IMMUNIZATION SERVICES:

- Deliver vaccines with matching quantities of auto-disable syringes and sharps boxes.
- Make sterile syringes and sharps boxes available in every health-care facility.

ESSENTIAL DRUGS:

- Build rational use of injections into the national drug policy.
- Make single-use syringes available in quantities that match injectable drugs in every health-care facility.

HIV/AIDS PREVENTION:

- Communicate the risk of HIV infection associated with unsafe injections.

HEALTH-CARE SYSTEM:

- Monitor safety of injections as a critical quality indicator for health-care delivery.

MINISTRY OF HEALTH:

- Coordinate safe and appropriate national policies with appropriate costing, budgeting and financing.

REMEMBER:

- Observe the “ONE SYRINGE – ONE NEEDLE SET – ONE INJECTION” rule.
- A safe injection is one that:
 - does no harm to the recipient
 - does not expose the health worker to avoidable risk
 - does not result in waste that puts other people at risk.
- An unsterile injection is usually caused by:
 - reusable syringes that are not properly sterilized before use
 - single-use syringes that are used more than once
 - used syringes and needles which are not disposed of properly.

APPENDIX 5: Key contacts for Angola

Table 1: World Health Organization – Angola

Office of the WHO Representative	<p>Dr Fatoumata B.T. DIALLO Rua Majot Kahangulo, 197 Prédico as Nacoes Unidas, 7é Andar Bairros das Ingombotas Luanda</p> <p>Phone: + 244 2 39 1980 + 244 2 33 2398/ 39 4153 Fax: + 244 2 33 23 14</p> <p>E-mail: wr@ao.afro.who.int GPN: 35624</p>
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Table 2: Relevant WHO Regional Offices and Headquarters Technical Staff

Areas of work	AFRO contact	HQ contact
CD surveillance and control	Dr. Idrissa Sow sowi@whoafr.org	Dr Máire Connolly connollyma@who.int Dr Michelle Gayer gayerm@who.int Dr Pamela Mbabazi mbabazip@who.int
Outbreak alert and response	Dr. Idrissa Sow sowi@whoafr.org	Dr Mike Ryan ryanm@who.int Mr Pat Drury druryp@who.int
Acute lower respiratory infections		Dr Shamim Qazi qazis@who.int
African trypanosomiasis		Dr Jean Jannin janninj@who.int
Bacillary dysentery, cholera, typhoid fever, other diarrhoeal diseases		Dr Claire-Lise Chaignat chaignatc@who.int
Diphtheria		Dr Rudi Eggers eggersr@who.int Dr Julian Bilous bilousj@who.int
Dracunculiasis		Dr Ahmed Tayeh tayeha@who.int

HIV/AIDS	Prof George Ki-zerbo Ki-zerboG@whoafr.org Dr Emil Jones ASAMOAHO-ODEI asamoahodeie@whoafr.org	Dr Andrew Lee Ball balla@who.int Dr Micheline Diepart diepartm@who.int
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Measles		Dr Peter Strebel strebel@who.int
Meningococcal disease		Dr William Perea peraw@who.int Dr Eric Bertherat bertherate@who.int
Onchocerciasis		Dr Tony Uktey uketyt@who.int
Pertussis (whooping cough)		Dr Philippe Duclos duclosp@who.int
Plague		Dr William Perea peraw@who.int Dr Eric Bertherat bertherate@who.int
Poliomyelitis		Mr Chris Maher maherc@who.int Ms Claire Chauvin chauvinc@who.int
Rabies		Dr François-Xavier Meslin meslinf@who.int

Schistosomiasis		Dr Lorenzo Savioli saviolil@who.int Dr Dirk Engels engelsd@who.int
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Viral haemorrhagic fevers		Dr Cathy Roth rothc@who.int Mr Pierre Formenty formentyp@who.int
Yellow fever		Dr Sylvie Briand briands@who.int
Health aspects of biological agents		Dr Ottorino Cosivi cosivio@who.int
Injection safety		
Safe water		Mr Jose Hueb huebj@who.int

APPENDIX 6: List of WHO guidelines on communicable diseases

Title	Publication no./Date
FACT SHEETS	
Anthrax	Fact Sheet No. 264 October 2001 http://www.who.int/mediacentre/factsheets/fs264/en/
Cholera	Fact Sheet No. 107 Revised March 2000 http://www.who.int/mediacentre/factsheets/fs107/en
Dengue and dengue haemorrhagic fever	Fact Sheet No. 117 Revised April 2002 http://www.who.int/mediacentre/factsheets/fs117/en/
Diphtheria	Fact Sheet No. 89 Revised December 2000 http://www.who.int/mediacentre/factsheets/fs089/en/
Food safety and foodborne illness	Fact Sheet No. 237 revised January 2002 http://www.who.int/mediacentre/factsheets/fs237/en/
Hepatitis B	Fact Sheet No. 204 Revised October 2000 http://www.who.int/mediacentre/factsheets/fs204/en/
Hepatitis C	Fact Sheet No. 164 Revised October 2000 http://www.who.int/mediacentre/factsheets/fs164/en/
Influenza	Fact Sheet No. 211 March 2003 http://www.who.int/mediacentre/factsheets/fs211/en/
Injection safety: background	Fact Sheet No. 231 Revised April 2002 http://www.who.int/mediacentre/factsheets/fs231/en/
Malaria	Fact Sheet No. 94 http://www.who.int/mediacentre/factsheets/fs094/en/
Measles	Fact sheet N°286 March 2005 http://www.who.int/mediacentre/factsheets/fs286/en/
Plague	Fact Sheet No. 267 February 2005 http://www.who.int/mediacentre/factsheets/fs267/en/
Poliomyelitis	Fact Sheet No. 114 Revised April 2003 http://www.who.int/mediacentre/factsheets/fs114/en/
Rabies	Fact Sheet No. 99 Revised June 2001 http://www.who.int/mediacentre/factsheets/fs099/en/
Salmonella	Fact Sheet No. 139 April 2005 http://www.who.int/mediacentre/factsheets/fs139/en/index.html http://www.who.int/mediacentre/factsheets/fs139/en/index.html
Smallpox	Smallpox http://www.who.int/mediacentre/factsheets/smallpox/en/
Tuberculosis	Fact Sheet No. 104 Revised March 2005 http://www.who.int/mediacentre/factsheets/fs104/en/

Typhoid fever and paratyphoid fever	Water related diseases http://www.who.int/water_sanitation_health/diseases/typhoid/en/
The World Health Organization	About WHO http://www.who.int/about/en/

GUIDELINES/PUBLICATIONS/REPORTS	
Communicable Diseases control in emergencies - A field manual. http://www.who.int/infectious-disease-news/IDdocs/whocds200527/whocds200527chapters/index.htm	WHO/CDS/2005.27 ISBN 92 4 154616 6
Protocol for the assessment of national communicable disease surveillance and response systems. Guidelines for assessment teams. http://www.who.int/emc-documents/surveillance/whocdscsr20012c.html	WHO/CDS/CSRIISR/2001.2 English only
Strengthening implementation of the Global Strategy for Dengue Fever/Dengue Haemorrhagic Fever Prevention and Control. http://www.who.int/csr/resources/publications/dengue/en/whocdsdenic20001.pdf	WHO/CDS/(DEN)/IC/2000.1 English only
WHO report on global surveillance of epidemic-prone infectious diseases. http://www.who.int/csr/resources/publications/surveillance/WHO_CDS_CSR_ISR_2000_1/en/	WHO/CDS/CSR/ISR/2000/1 English only
Guidelines for the collection of clinical specimens during field investigation of outbreaks http://www.who.int/emc-documents/surveillance/whocdscsredc2004c.html	WHO/CDS/CSR/EDC/2000.4 English only
Hepatitis A	WHO/CDS/EDC/2000.7 English only
Guidelines for epidemic preparedness and response to measles outbreaks http://www.who.int/csr/resources/publications/measles/whocdscsr991.pdf	WHO/CDS/CSR/ISR/99/1 English only
WHO global influenza preparedness plan 2005 http://www.who.int/csr/resources/publications/influenza/WHO_CDS_CSR_GIP_2005_5.pdf	WHO/CDS/CSR/GIP/2005.5 English only
Plague manual: epidemiology, distribution, surveillance and control http://www.who.int/csr/resources/publications/plague/WHO_CDS_CSR_EDC_99_2_EN/en/index.html	WHO/CDS/CSR/EDC/99.2 English and French
Laboratory methods for the diagnosis of epidemic dysentery and cholera, 1999 http://www.cdc.gov/ncidod/dbmd/diseaseinfo/cholera/top.pdf	WHO/CDS/CSR/EDC/99.8 English and French
Control of epidemic meningococcal disease. WHO practical guidelines. 2nd ed.	WHO/EMC/BAC/98.3:6
Guidelines for the surveillance and control of anthrax in human and animals. 3rd ed.	WHO/EMC/ZDI/98.6
Cholera and other epidemic diarrhoeal diseases control. Technical cards on environmental sanitation, 1997 http://www.who.int/csr/resources/publications/cholera/WHO_EMC_DIS_97_6/en/	WHO/EMC/DIS/97/6
Epidemic diarrhoeal disease preparedness and response. Training and practice, 1998 (Participant's manual)	WHO/EMC/97.3 Rev.1 English, French and Spanish

Epidemic diarrhoeal disease preparedness and response. Training and practice, 1998 (Facilitator's guide)	WHO/EMC/97.4 Rev.1 English, French and Spanish
Joint WHO-UNICEF statement fro Cholera vaccine use in tsunami affected areas. http://www.who.int/cholera/tsunami_cholera_vaccine/en/index.html	
Dengue haemorrhagic fever: diagnosis, treatment, prevention and control. 2nd ed. http://www.who.int/csr/resources/publications/dengue/en/itoviii.pdf Prevention and Control of Dengue and Dengue Haemorrhagic Fever-Comprehensive Guidelines http://w3.who.int/Section10/Section332/Section554_2585.htm	1997 English only
Guidelines for the control of epidemics due to <i>Shigella dysenteriae</i> type 1 http://whqlibdoc.who.int/publications/2005/9241592330.pdf	ISBN 92 4 159233
VIDEOS	
Protecting ourselves and our communities from cholera (41 min). http://www.who.int/emc/diseases/cholera/videos.html	2000 English and French
WEB SITES	
WHO	http://www.who.int/
WHO/Cholera	http://www.who.int/topics/cholera/en/index.html
WHO Communicable Diseases and Surveillance	http://www.who.int/csr/en/
WHO Communicable Diseases Surveillance and Response	http://www.who.int/csr/
WHO Infectious Diseases news, documents and Communicable disease toolkits	http://www.who.int/infectious-disease-news/
WHO Roll Back Malaria partnership	http://www.rbm.who.int/
WHO/ Roll Back Malaria department	http://www.mosquito.who.int/malariacontrol
WHO/Stop TB	http://www.stoptb.org/
WHO/Water and Sanitation	http://www.who.int/water_sanitation_health/en/

APPENDIX 7: Immunization schedule for Angola

VACCINE	DESCRIPTION	SCHEDULE
BCG	Bacille Calmette–Guérin vaccine	Birth
DTwP	Diphtheria and tetanus toxoid with whole-cell pertussis vaccine.	2, 4, 6 months
OPV	Oral polio vaccine	2, 4, 6 months
Measles*	Measles vaccine	9 months
TT	Tetanus toxoid vaccine	Pregnant women and WCBA: 1st contact; +1 month; +6 months; +1 year, +1 year
Yellow fever	Yellow fever vaccine	9 months

WCBA = women of childbearing age.

* Vitamin A supplementation is scheduled at 6 and 9 months.

APPENDIX 9: Population of Angola, 2005–2015

Indicators (medium variants)	2005	Percentage (%)	2015	Percentage (%)
Total population	15 941 000	-	20 947 000	-
Population aged under 0–4 years	2 974 000	18.7	3 775 000	18.0
Population aged under 0–14 years	7 407 000	46.5	9 528 000	45.5
Population aged 14–64 years	8 143 000	51.1	10 910 000	52.1
Population aged 65+ years	391 000	2.5	508 000	2.4
Population aged 80+ years	37 000	0.2	53 000	0.3
Urban population	5 941 212	37.2	9 408 000	44.9
Rural population	10 029 788	62.8	10 798 000	55.1

Data source: United Nations Population Division (UNPOP). World Population Prospectus: Population Database – download May 2005

APPENDIX 10: Basic health indicators in Angola

Life expectancy at birth (years), 2003	40 years
Life expectancy at birth (years), 1970	37 years
Infant mortality rate (IMR), 1960	208
Infant mortality rate (IMR), 2003	154
Under-5 mortality rate (U5MR), 1960	345
Under-5 mortality rate (U5MR), 2003	260
Maternal mortality ratio adjusted (MMR), 2000	1700
Life time risk of maternal death, 1 in: (2000)	7
Crude birth rate per 1 000 (1970)	49
Crude birth rate per 1 000 (2003)	52
Crude death rate per 1 000 (1970)	27
Crude death rate per 1 000 (2003)	24
Annual population growth rate 1970–1990 (%)	2.6
Annual population growth rate 1990–2003 (%)	2.9
% of total population with access to improved sanitation (2002)	30%
% of population with access to improved sanitation – urban (2002)	56%
% of population with access to improved sanitation – rural (2002)	16%
% of total population with access to improved drinking-water sources (2002)	50%
% of population with access to improved drinking-water sources – urban (2002)	70%
% of population with access to improved drinking-water sources – rural (2002)	40%

Sources: UNICEF, World Bank, United Nations Development Programme.